UK Power Networks

Delivering your electricity

Part 2

The outcomes we have delivered through engaging with stakeholders

2022/23 Stakeholder Engagement and Consumer Vulnerability Incentive

Redacted Version

The Institute of Customer Service MEMBER

Ranked the best customer service provider of any utility and 3rd across all organisations in the UK

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Five-star rating and **19x more reviews** than all other DNOs combined

Part 2

UK Power Networks is the UK's largest electricity distributor, delivering power to 8.4 million homes and businesses across London, the East and South East of England.

We take the opportunity through the Stakeholder Engagement and Consumer Vulnerability (SECV) submission to summarise how our engagement with a wide range of customers and stakeholders has led to action and impact over the last year – showcasing how insight informs the decisions we take, how we support our vulnerable customers and how we deliver positive outcomes for society.

Flexibility Forum – see p.6

Design workshop breakout session to develop a digital self-service energy planning tool for local authorities – see p.7

Sharing learnings and outcomes from the world's largest trial of commercial EVs – see p.8

Our submission is divided into three parts:

Part 1

Outlines our Stakeholder Engagement Strategy, our Consumer Vulnerability Strategy, how we work with partners and collaborators, and how we measure the impact of our actions.

Part 2

Demonstrates the impact we have delivered through engaging with our stakeholders across key focus areas: enhancing our services to meet customers' evolving needs, enhancing whole system resilience, and enabling the Net Zero transition for all.

Part 3

Explains how we understand our customers' evolving needs and ensure that those in vulnerable circumstances receive the most impactful support.

Contents

Some text has been redacted due to commercial sensitivity.

Putting customers and communities at the heart of our decisions

The energy sector is facing new and evolving challenges. Customer satisfaction with utilities is at an eight-year low, customers are concerned about high energy costs and potential rolling planned power cuts, and constraints at transmission level are now affecting the pace of distribution-level connections.

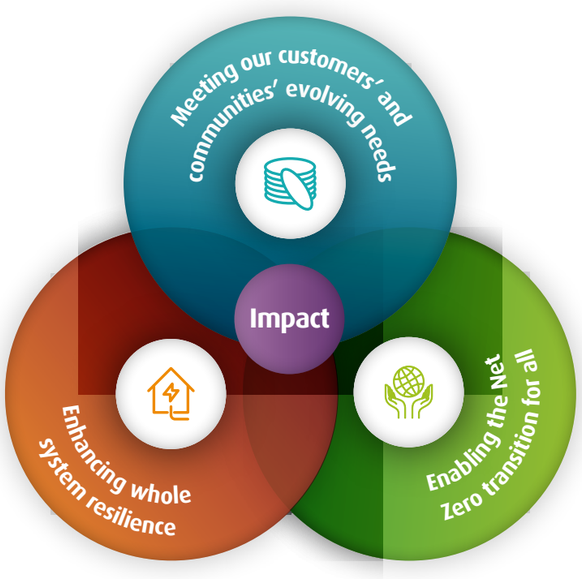
Meaningful engagement has helped us to get to grips with the root causes of these issues, collaborate with others within and beyond our sector, and forge new ways forward to deliver better outcomes for customers in our regions and nationally. By learning from leading customer service practices in other sectors over a number of years, we have been able to buck the utilities sector trend and deliver sustained excellent service for our customers, consistently ranking in the top five in the Institute of Customer Service's UK Customer Satisfaction Index. We have taken the lead in tackling cross-industry issues, from unlocking faster connections in the face of transmission-level constraints, to developing a new product to unblock barriers to scaling up public EV charging to meet growing demand, openly sharing our approaches nationally. We also brought together all DNOs to develop a collaboration framework to guide our joint ongoing efforts in the interest of customers, now and in the future.

In this final year of the Stakeholder Engagement and Consumer Vulnerability submission, we have highlighted examples that demonstrate the year-on-year evolution of our engagement-driven initiatives and the benefits they deliver. I would like to thank the Panel for their constructive feedback over the last eight years, which has helped shape the continuous improvement of our engagement approach.

Ian Cameron, Director of Customer Service and Innovation

Key challenges affecting our customers' lives

We have updated our focus areas this year to reflect the challenges of supporting customers' and communities' evolving needs during the cost of living crisis, enhancing whole system resilience in an interconnected energy system, and enabling the Net Zero transition for all, as described in Part 1. These issues are related, and many of the initiatives featured in this submission sit where these areas overlap.



Meeting our customers' and communities' evolving needs

- The cost of living crisis has put enormous pressure on customers' finances, leading to a 3.1% fall in real household disposable income per person in 2022
- Through focus groups we learned that the customer impact of disruption is exacerbated by wider pressures in their lives
- Comparing insights across DNOs, we learned that customers now have a lower tolerance for anything other than perfect service

Enhancing whole system resilience

- Energy security concerns, more disruptive storms and the risk of rolling planned power cuts mean resilience is now a greater concern for customers
- 7GW-13GW nationally (20-40% of distributed generation capacity in queue), including 1.3GW capacity in our eastern and southern regions, could be accelerated to connection by optimising queue management
- 90% of local authorities in our regions aim to reach Net Zero ahead of the national 2050 target. We need to understand where and when additional capacity is needed to make these plans a reality

Enabling the Net Zero transition for all

- Domestic battery installations in our regions increased by 255% and domestic solar by 195% over the last year. Customers who can afford to invest are increasingly using low-carbon technologies (LCTs) to reduce their energy bills, with lower emissions a by-product rather than the primary driver
- Government has committed to support delivery of 300,000 public EV chargers by 2030. We needed to further ramp up our efforts to support the scale of public charging required.

What to look out for

As our engagement approach has matured, we have extended our engagement into new and emerging areas. While we have continued to engage on topics such as safety, learning from last year's storms, and flexibility, in this document we have chosen to focus on case studies that demonstrate engagement above and beyond the baseline practice expected of DNOs at this stage of the incentive.

Measurable benefits

- We have provided **greater clarity on benefits** by focusing on benefits delivered in-year, comparing trial and rollout benefits where possible
- We have highlighted how **initiatives have scaled up and evolved year-on-year,** including updates on the benefits of initiatives featured in previous submissions
- All social valuation figures have been calculated using the **common DNO methodology**.

Taking the lead in collaboration

Throughout Part 2 we provide examples of collaboration and sharing learnings with other DNOs, and the impact this delivered, including:

- Collaborating across industry to deliver fast, fair and efficient connections
- Developing a solution to support scaling up public charging
- Sharing best practice in how we respond to major events and support customers to prepare for potential rolling planned power cuts
- Actively supporting other DNOs to develop their Open Data portals to benefit their customers and stakeholders.

Meeting our customers' and communities' evolving needs

Rising energy prices and the cost of living crisis are driving changes in customer behaviour, with those who can afford to do so rapidly adopting domestic LCTs to manage their energy bills. The pressures in customers' lives have contributed to a UK-wide, cross-sector fall in customer satisfaction, with our research finding customers' tolerance for less-than-perfect service has reduced. Against this backdrop, we set out to:

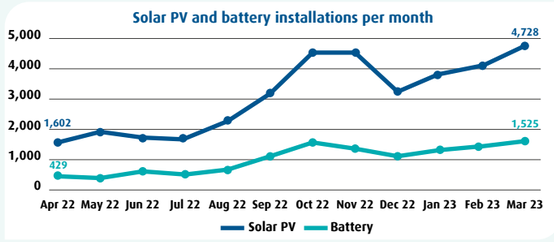
- Facilitate customers to take advantage of LCTs that lower their energy costs
- Drive higher levels of customer satisfaction against a backdrop of falling satisfaction nationally
- Unlock broader customer and societal value through opening up our data

Supporting customers to manage their costs through battery and solar technology

Scaling Up

The challenge

With energy costs reaching record highs, we saw domestic battery installations grow by 255% and domestic solar increase by 195% over the last regulatory year as customers sought to reduce their energy bills and increase their own resilience. Through engaging with local authorities and installers, we learned local authorities were also ramping up their Solar Together programme of domestic battery and solar installations. By combining engagement with data modelling insights, **we identified the urgent need to adapt our processes to enable more customers to quickly and easily install battery and solar technology to take control of their energy costs.**



What we did

Engaged with battery and solar installers to understand the barriers to faster installations

Faster approval of battery and solar applications could enable customers to start benefitting from lower energy bills sooner. Leveraging our strong relationships with local authorities, we engaged with 13 battery and solar installers to understand the issues preventing domestic solar and battery applications being instantly approved through our self-service portal for domestic LCT connections. Developed working closely with EV chargepoint installers, the portal enables LCT applications to be automatically assessed and approved, accelerating installations by up to 10 days and reducing handoffs between companies in the customer journey. We learned that many combined solar and battery installations fall above the 3.68kW threshold where network reinforcement could be needed, requiring additional work by us. The cost of reinforcement for generation in residential areas can, in many cases, negate the financial case for the customer to go ahead or lead them to scale down the capacity installed, reducing their potential bills savings. We decided to investigate this threshold further.

Adapted our modelling approach for multi-LCT homes based on real-life customer behaviour

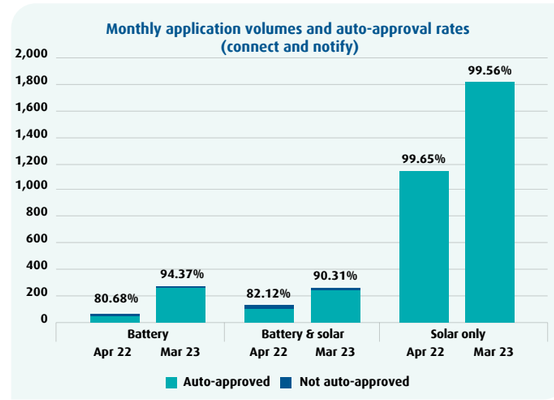
We saw the opportunity to accelerate combined solar and battery installations if we could increase the individual connection threshold without compromising the network, allowing more installations to be auto-approved via our portal and avoiding additional cost or delays to customers. The industry threshold for connecting LCTs is set at a conservative level. Combining insights from previous innovation projects, we were able to model a whole household view that recognises how customers actually use solar and battery technology in a complementary way, which allowed us to increase the individual connection threshold. This new approach was only possible because our cross-department LCT team takes a joined-up view of both generation and load, which are traditionally modelled separately.

Trained solar and battery installers on our self-service portal and processes to increase auto-approvals

We supported installers to use the portal for more solar and battery installations, enabling quick auto-approval for more customers. We published a video user guide and worked with third-party online influencers to promote the portal and its benefits for all installers. Our ring-fenced team provides ongoing support and proactively contacts and advises installers who are not consistently benefitting from these low-effort automated tools, enabling a faster, more streamlined experience for customers.

Outcomes

- 49,898 battery and solar installations supported this year, with 38,800 households expected to benefit from up to 61% lower electricity bills, saving £710 per year on average
- Increasing the individual connection threshold avoids £15,000 average additional reinforcement costs, protecting financial viability for customers looking to reduce their bills
- Customers installing over 3.68kW generation now benefit from lower energy bills at least 25 days sooner as we no longer need to do a manual technical assessment, with 145% increase in volume of applications auto-approved this year
- 3,550 applications over 3.68kW instantly approved and 17,156kW additional capacity enabled over six months through increasing the individual connection threshold



Meeting our customers' and communities' evolving needs

Providing empathetic, easy and convenient service to customers under pressure

DNO First | Leadership

The challenge

With external pressures mounting on customers, from the cost of living crisis to the higher potential for rolling planned power cuts, we saw power cut customer satisfaction scores declining despite our service offering remaining the same. Feedback from other DNOs indicated this was an industry-wide issue. Through research we learned that customers' tolerance for anything other than perfect service is being eroded by the wider challenges they are facing, and by the higher cost of energy. **We applied insight from research and engagement to adapt our service to reflect the changing pressures in customers' day-to-day lives.**

What we did

We triangulated data, customer engagement and national benchmarking to understand customers' changing needs. Insights from customer surveys and bespoke focus groups identified the growing importance of quick and easy service and getting it right first time. Through benchmarking as part of the Institute of Customer Service's cross-sector UK Customer Satisfaction Index (UKCSI), we learned that the very best companies scored highly on emotional connection, identifying that greater empathy and personalisation in every interaction would enhance the customer experience. We updated our journeys to ensure we respond empathetically to the challenges in customers' lives, offering additional support where there is the greatest adverse impact. We targeted action to ease the pressure on customers and ensure we provide right-first-time service.

Easing the pressure on customers

Switched to digital payments so customers receive money sooner

Following longer power cuts, we need to make payments to customers to compensate them for the disruption. Customers may also be out of pocket due to unexpected food costs, especially in rural areas where food delivery services are not available for us to pay for a customer's meal ourselves. Based on conversations with customers, our call agents raised that more customers are struggling to afford these unexpected costs, making their experience of power cuts even harder, so we explored how to get money to customers faster. This led us to change the status quo of making cash or cheque payments for unexpected expenses by developing a secure digital payment option with a PayPal-like experience to allow customers to choose to receive money digitally, reducing payment time from weeks to hours. Customers rated the experience as 9.5/10 during early rollout, so we scaled the approach.

Adapted our works and support to minimise the impact of disruption on customers

Recognising the impact of planned power cuts during winter, combined with the increased impact when more customers are working from home, we took proactive action by bringing forward our winter working restrictions. We restricted planned outage durations to six hours, reinstated the portable Wi-Fi devices we deployed during the COVID-19 pandemic to minimise inconvenience for those working from home, and introduced additional text alerts confirming when power is restored. In addition, our senior management team reviewed every planned power cut scheduled during the World Cup and rescheduled non-essential work to minimise the impact on customers' lives.

Getting service right first time

Developed customer journey tracking to manage right-first-time service

As a result of learning that right-first-time service was becoming increasingly important to customers, we developed digital journey tracking to allow managers to quickly identify and rectify any issues which may prevent us getting our service right first time. This approach enables us to learn and respond much faster than waiting two weeks for insights from the regulatory customer satisfaction surveys, during which time other customers may have been dissatisfied due to the same issue.

Directed queries to the right place first time using enhanced natural language processing

Alongside the rise of home working, the rate of calls we receive per customer interrupted has risen by 24% since 2020/21. Customer feedback also told us our interactive phone system was overly complex. We learned from the banking sector and applied natural language processing technology so more customers are directed to the right place for their query first time, connecting them directly to other organisations such as energy suppliers or supporting customers to take their next action, e.g. by texting a weblink. Our trial in general enquiries saw a 29% reduction in customer call handoffs, reducing customer time and effort to have their query resolved. We then scaled the approach to faults, customer care and complaints to reduce customer wait time in queues, particularly in times of high call volumes.

Outcomes

- Ranked 1st in the UKCSI in July 2022 and 3rd in January 2023 – bucking the utilities sector's eight-year low in satisfaction
- Only company to achieve top 10 position in all five of the UKCSI dimensions of customer satisfaction in January 2022, July 2022 and January 2023: experience, complaint handling, customer ethos, emotional connection, and ethics
- 86% of customers now choose digital payment, with 994 customers receiving a total of £82,618 during early rollout, receiving money within hours rather than weeks
- 29% reduction in customer call handoffs, directing customers to the right place first time through enhanced natural language processing, with 96.6 customer satisfaction (+0.17 on 21/22)

Digital payments, RPA and enhanced natural language processing delivered over £81,000 process efficiency savings this year and will unlock ongoing social value of £0.83 over and above every £1 spent over the next five years

Sustained high performance:
Our ranking across all sectors in the Institute of Customer Service UK Customer Satisfaction Index

101st	4th	1st	3rd
July 2021	January 2022	July 2022	January 2023

The Institute of Customer Service MEMBER

Driving forward the value of Open Data

Collaboration

The challenge

Open energy data is a key enabler of customer and societal benefits by facilitating open innovation, increasing energy market competition and supporting more LCTs to connect. Greater standardisation and adoption of Open Data within and across sectors is needed to deliver the full value to customers; however, due to its open nature, measuring its usage and benefits is challenging. Last year we developed our Open Data strategy and portal based on engagement to understand the data needs and preferences of stakeholders from local authorities to technology providers, developing our position as network pioneers in Open Data. **We wanted to leverage our learning and leading position to drive forward Open Data standardisation and adoption across energy, utilities and wider sectors to maximise customer and societal benefits.**

What we did

Built evidence of the customer and societal value of Open Data

- **We developed a self-service mapping tool to support local planning for potential rolling planned power cuts** → see page 5
- **We tailored Open Data Portal pages bringing together datasets to support Local Area Energy Planning** → see page 7
- **We showcased real-world uses of our Open Data to demonstrate its value.** To overcome the challenge of tracking and measuring who uses our Open Data and why, we now invite users to submit a case study to demonstrate the value of the data to other users. We have collated examples of real-life applications by software providers, innovators, LCT developers and local authorities.
  For example, solar and battery developer OnGen highlighted how our Open Data helps them carry out network connection analysis, enabling them to advise their clients on the potential constraints they may face when installing renewables in certain locations. This analysis has formed a key part of OnGen's managed service and has helped clients save time and financial resources by planning for sites that are more likely to be suitable for their needs.
  Our engagement with emergency services also highlighted that the data we published on secondary substations, showing whether they are indoors or outdoors, provides fire and rescue services with better intelligence when sending firefighters to sites with electrical equipment.
- **We joined the Industry Data for Society Partnership, a first-of-its-kind global initiative to advance the use of private sector Open Data for societal good.** Invited by Microsoft US, we joined forces with six global cross-sector leaders to share data to address societal challenges. Data from our Open Data Portal and dashboards are central to the first data challenge, which aims to demonstrate how Open Data can support local governments to deliver Net Zero and environmental goals.

Driving greater standardisation of Open Data approaches across our industry

- **We are leading the development of consistent approaches across all gas and electricity distribution and transmission networks.** Through our role as chair of the Digitalisation and Data Steering Group, we are driving alignment on Open Data structure, terminology, licensing, and coordination with national and cross-sector initiatives, to enable greater consistency and reliability for data users interacting with the energy system.
- **We are advocating for alignment on open licensing.** To drive greater consistency, we published a thought leadership paper advocating for energy networks to align to a common, effective and proportionate open licensing framework, based on experience of developing our Open Data Portal and learnings from engagement with Opendatasoft, the Open Data Institute and Open Innovations.

Shared our approach to support adoption

- **We are supporting other DNOs to adopt Open Data approaches.** We actively shared our approach with GB and Northern Ireland DNOs, including sharing code from our Open Data Portal and publishing our methodologies. Three DNOs have since adopted the same platform as us and we have offered to beta test their portals. Northern Ireland Electricity Networks have also adopted our data triage approach.
- **We are supporting Open Data development in the water sector.** In recognition of our work and experience, we were invited to join the steering group for the water sector's Open Data initiative, Stream, as the only non-water sector expert member. We also shared our approach bilaterally with two water companies to help them drive greater value from Open Data, and with wider infrastructure operators through the cross-sector Digitalisation Transformation Task Group.

Outcomes

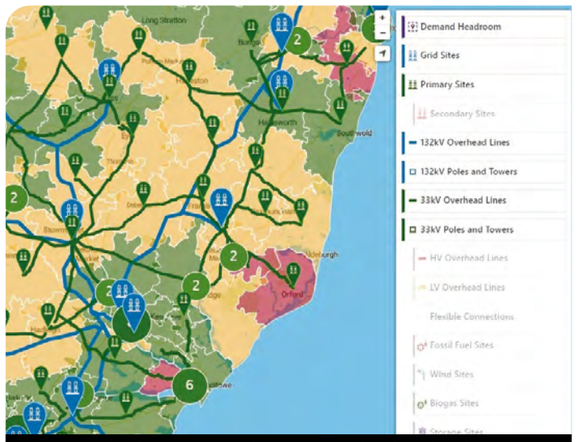
- 50,428 Open Data Portal users since launch in 2021
- Grew monthly users by 480% within just two years of launching our Open Data Portal, from 1,000 to 5,800
- Four user case studies published, demonstrating the value of applying our data
- Three DNOs and two water companies actively supported to develop their Open Data portals, unlocking value for their customers and stakeholders
- Strengthening the water sector's Open Data approach through sharing our learnings

Evolving our Open Data approach

2021
- Launched Open Data Portal
- 17 unique datasets
- 1,000 monthly users
- Published existing datasets

2022
- 31 unique datasets (82% increase)
- 2,400 monthly users (140% increase)
- Published new datasets

2023
- 34 unique datasets (10% increase)
- 5,800 monthly users (142% increase)
- Near real-time data and data services



Our Network Infrastructure and Usage Map, developed with stakeholder input, supports self-service by providing key details of our network infrastructure, including network usage, demand headroom capacity and connected generation and demand, with 56,042 interactions and 943 users in March 2023

Enhancing whole system resilience

External pressures on the energy system are growing. The impact of the war in Ukraine is driving energy security up the national agenda, with the risk of rolling planned power cuts on the agenda for the first time in 50 years, while increasingly frequent severe weather is causing more prolonged supply disruptions. All of this means resilience is now a higher priority for customers and stakeholders. At the same time, a greater drive for local renewable energy solutions is increasing demand on the network, however, transmission-level constraints are driving connection lead times beyond 2030 on certain parts of the system. To meet these growing challenges, we focused on:

Evolving our class-leading response to major events

Finding innovative ways to unlock greater and faster access to the system

Supporting local area energy planning and developing a robust evidence base for network intervention

Enhancing how we manage the impact of severe disruption

Collaboration

The challenge

Severe weather is increasing globally and in Great Britain, with Storms Arwen, Dudley, Eunice and Franklin causing widespread and significant disruption to our customers in winter 2021-22, followed by an unprecedented extreme heatwave in July 2022. We need to continue to adapt our response to ensure our service is resilient to these challenges, so we set out to identify, implement and share best practice to enhance our service during severe weather.

Geopolitical pressures contributed to an increased, albeit very low, risk of rolling planned power cuts last winter. While we have well-established plans in place, our engagement with local authorities and others found increased concern about the potential impact. We saw the opportunity to step in to support preparations, when others were stepping away due to the media risk. As well as proactively contacting all Priority Services Register (PSR) customers to provide advice on how to prepare and respond in such an event, we engaged with local and regional stakeholders to support their planning.

What we did

Enhanced our response during severe weather

- **We learned from international best practice to enhance our response during severe weather.** We engaged with US networks to learn from their experience during hurricanes, which led us to introduce capability to provide Estimated Time of Restoration at a regional level for major storms, and to publish video content to reassure customers by explaining what we do to restore power during storms, for use across all our social media channels.
- **We enhanced whole system resilience for our shared customers.** Power cuts can result in knock-on impacts on other essential services, which are likely to grow as we all become more reliant on electricity. Building on our engagement with Thames Water last year to identify high-impact sites where outages could cause an environmental and community impact, we worked with two further water companies in our regions to strengthen whole system resilience planning and added additional sites to our critical business priority register. We also engaged with South East Water to inform their upcoming Price Review plans in this space.
- **We applied customer analytics to address pain points.** Our website is the main channel customers turn to for power cut information, so we used web analytics and reviewed every low-scoring customer satisfaction response to identify and prioritise improvements. We identified a 19% failure rate for customers using the address search function, so we decided to offer two new ways for customers to find their address in a power cut, using what3words and a pin drop on the map. We are also introducing a live news feed and are making it easier to distinguish between individual power cuts where multiple power cuts affect a single area, making it easier for customers to find up-to-date information and plan ahead.

Shared and learned from best practice across DNOs

We joined forces across DNOs to share best practice in how we respond to storms and support customers to prepare for potential rolling planned power cuts. As a result:

- ENWL and NPG are replicating our approach to enable customers to find out the times and areas of rolling power cuts
- NPG is adopting a similar call overflow capacity during storms
- We adopted learnings from SSEN to enhance our approach to sending bulk text messages faster.

Supported communities to plan for rolling planned power cuts

- **We engaged with local authorities, local resilience forums (LRFs), healthcare and emergency services to provide guidance to help them prepare.** These stakeholders play a key role in planning and delivering support during major community disruption. Engaging with LRFs enabled us to reach broader stakeholders such as other utilities, highways and train companies. We held 14 bilateral engagements, three regional roadshows with 398 local and regional stakeholders, and a dedicated NHS event to share information and identify additional support our stakeholders would value, resulting in us developing and sharing guidance with all 127 local authorities and 12 LRFs in our regions. This engagement raised awareness of our role, with LRFs keen to continue engagement on wider resilience. As a result we will hold follow-up sessions to prepare for future storms and winter weather on an ongoing basis.
- **We developed a self-service mapping tool to aid stakeholders in planning support for communities.** During engagement, local authorities and LRFs told us it was complex to piece together a geospatial view of how their communities could be affected. We developed a mapping tool that overlays block codes with local authority and MP constituency boundaries and also maps the number of PSR customers by category at postcode and Lower Super Output Area (LSOA) level, making it easier for local stakeholders to plan support for their communities. We also provided data to the national resilience database used by local authorities and emergency services.

Outcomes

- Self-service mapping tool helps local authorities and LRFs to plan support for communities – with 92 users across 127 local authorities and 12 LRFs signed up to the tool and 13,489 views
- 2,087,342 PSR customers including 115,155 medically dependent customers received information to help them prepare for potential rolling planned power cuts
- 10,196 water sites added to our critical business priority register, supporting whole system resilience
- 95.85 customer satisfaction with online customer journeys during power cuts (+1.02 on 21/22)

Leading whole system collaboration to deliver fast, fair and efficient connections

Leadership

The challenge

Across Great Britain, increasing levels of renewable generation are connecting to the network, but transmission-level constraints are resulting in connection lead times in the 2030s in some areas, with 60% of accepted connection offers yet to connect. In adjacent DNO networks in West London, we are seeing housing developers unable to connect until the 2030s due to exceptionally high demand from data centres driving transmission-level constraints. We urgently need to tackle these issues as a sector to ensure connections customers receive a high-quality service; ensure capacity is utilised in a fair and efficient way that keeps costs low for customers overall; ensure we meet growing electricity demand; and contribute to the government's target of decarbonising the power sector by 2035, as highlighted in the recent Parliamentary Select Committee.

Since the South East is seeing impacts on connection lead times earlier and more severely than other regions, we are forging the path and supporting other regions to get ahead of the issues, rather than moving at the pace of the slowest. Our engagement builds on our actions last year to challenge outdated planning assumptions about storage, with our proposal now accepted nationally, and takes forward solutions we developed through engaging with National Grid on our Regional Development Plan approach, which has delivered 600MW capacity in our regions in 2022.

What we did

Gave customers faster and more definitive connection assessments by managing the distribution and transmission boundary more efficiently

Existing processes between distribution and transmission networks were not designed for current volumes of connections, resulting in customers waiting up to nine months for an assessment, despite network capacity being available. We engaged with the ESO to explore how we could work together differently, with the ESO assigning the DSO a headroom limit to manage within, avoiding the need to refer every connection request to the ESO for a separate transmission assessment. To enable this, we are reviewing the information that needs to be shared between customers, DSOs, transmission networks and the ESO to make better decisions faster.

Optimised and managed the queue of connecting customers

Regulation requires that networks connect customers on a first come, first served basis, however, customer engagement and analysis of requests in the queue highlighted that this approach does not efficiently allocate capacity to customers who are ready to connect. Working with the ENA we developed an approach to optimise and manage the queue based on customer readiness to connect, ensuring available capacity is allocated quickly, fairly and efficiently.

Introduced a single coordinated connections queue across distribution and transmission

Customers asked for better visibility of their position in the connections queue. We engaged with the ESO to explore the art of the possible to overcome regulatory barriers and jointly manage a single queue to provide more transparency to customers. This is now being taken forward as a potential option through the GB Connections Reform Programme and we are seeking a more rapid solution in the short term.

Embedded smart functionality and working with customers once connected to make efficient use of overall capacity

We have implemented Active Network Management technology as standard for new connections, enabling a flexible connections approach whereby we can connect customers sooner and allow them to utilise more capacity. Instead of modelling connections based on worst-case scenarios which rarely materialise, we use real-time customer data to manage the system based on actual capacity rather than modelled assumptions.

Widened flexibility tender participation to new markets

- **We secured record flexibility capacity in-year.** Rather than chasing big numbers for flexibility tender requirements, we judge our success on the level and diversity of flexibility actually secured in-year, unlocking capacity which would otherwise require costly and time-consuming network reinforcement. Building on several years of procuring demand turn-down, for the first time we also procured over 400MW demand turn-up across 24 zones, enabling wind and solar to participate in flexibility for the first time. Our last tender saw participation skyrocketing to 1.1GW – equal to 60% of the flexibility contracted by all GB DNOs in 2021/22 – and 2MW competing for every 1MW requirement in generation-constrained zones, which benefits customers.
- **We embedded user-friendly, scalable processes to reduce effort when participating in larger tenders.** Flexibility providers told us manually checking multiple zones can be time-consuming and off-putting for potential bidders, a barrier which would grow as we scale up, so we published a full list of postcodes to enable bidders to automate checks against the 1,000+ zones included in the tender, and we are developing an API to automate this further. To lower barriers to participation, we also simplified our materials by providing a short introduction for potential bidders, which participants at our Winter Flexibility Forum rated as the most helpful resource for learning about or participating in flexibility opportunities. Adopting good practice from ENWL, we introduced a self-serve flexibility revenue calculator to support bidders in assessing opportunities.

Outcomes

- 7GW-13GW nationally (20-40% of capacity in queue) could be accelerated to connection by optimising queue management, including 1.3GW additional capacity (out of 7GW in the queue) across our EPN and SPN networks
- Assessments could be completed up to nine months faster through headroom limit approach, giving customers certainty sooner and saving up to 2.74 million tonnes carbon emissions
- New record of 1.1GW flexibility bids submitted, up 173% on Spring 2022, across more than 1,000 zones
- 61% increase in flexibility bidders compared to 2022, with wind and solar participating for the first time

Widening flexibility tender participation

- **2020**
  - 16 participants
  - First DNO to tender low voltage zones
  - 123MW of flexibility contracts awarded
- **2021**
  - 17 participants
  - Enabled large-scale participation from domestic EVs and storage by lowering the entry threshold from 100kW to 10kW
  - 350MW of flexibility contracts awarded
- **2022**
  - 18 participants
  - First tender to target existing assets to address short-term system needs
  - 367MW of flexibility contracts awarded
- **2023**
  - 29 participants
  - Enabled wind and solar to take part for the first time
  - Received 1.1GW qualifying flexibility capacity

Our approach to collaboration

Meaningful collaboration is not easy. We shifted the tone of discussions from 'it has never been done' to 'what if we could?', involving the Department for Energy Security and Net Zero (DESNZ) and Ofgem early so they have a stake in the solutions and in the customer benefits that justify the difficulty of doing things differently. This has resulted in agreement on solutions and timescales for implementation.

Central to our collaborative approach has been:

- Agreeing on a common view of customer issues that require whole system action at pace to meet growing electricity demand and deliver a decarbonised power system by 2035
- Focusing on solutions and not shying away from tackling difficult barriers.

Enhancing whole system resilience

Supporting local area energy planning and robust data for network investment

Collaboration

The challenge

To efficiently plan where and when to invest, we need to accurately forecast future demand, including demand driven by decarbonisation. Local authorities have a key role to play in delivering Net Zero by influencing over 80% of the UK's carbon emissions, according to the Climate Change Committee, and are mandated to develop robust plans to deliver their ambitions. Ofgem is consulting on the future of local energy institutions and governance in delivering Net Zero at lowest cost; while it is important to get these arrangements right, we cannot delay action until they are in place. Our real-world experience in supporting local authorities could also help inform these wider reforms.

90% of local authorities in our regions aim to reach Net Zero before the national 2050 target – a 23% increase on last year. However, our engagement with these stakeholders over several years has highlighted multiple challenges: lack of resources and expertise, the need for data to model different Net Zero pathways, and the need for analytical and spatial mapping capability to use that data. Building on our engagement last year to shape a consistent framework to support local authorities' local area energy planning, we are now actively working with local authorities to tackle these barriers and shape support to enable them to develop plans that provide us with a robust evidence base to plan network development.

What we did

Assembled a ring-fenced Local Area Energy Planning team and support model based on local authority needs

We understand that local area energy planning is the direction of travel in wider reforms, so we engaged extensively with local authorities to shape our practical support based on their needs. Through regional sessions and an in-depth survey, we developed insights into local authorities' awareness of local area energy planning, the barriers they face and the support they would value, which identified marked differences in awareness and maturity. We applied these insights to define and prioritise the support we offer, identify the skills needed in our team, map the likely profile of demand for support over time, and shape our forward engagement plans. This engagement enabled us to actively support seven local authorities to develop Local Area Energy Plans this year.

Created tailored Open Data Portal pages bringing together relevant datasets

We worked with Essex County Council, the Greater London Authority (GLA) and Regen to identify the common datasets needed to develop local authority energy plans. Comparing this with other local energy data projects and existing Local Area Energy Plans, we identified 30 planning challenges across six themes, which we validated via regional engagement sessions. Building on our work over several years to open up data in accessible and user-friendly formats, we collated key datasets by theme and use case on our Open Data Portal, enabling local authorities to easily access the datasets they need for each aspect of their plan. We launched a dedicated Local Area Energy Planning Open Data Portal page in October 2022, with 36,312 views and 1,598 unique visitors since launch.

Developed a digital self-service energy planning tool for local authorities

We put local authority users at the centre of the tool development, partnering with design thinking specialists That Product Studio, Energy Systems Catapult and Buro Happold and engaging throughout its development. We held 15 interviews with local authorities, community energy groups and Net Zero Hubs to understand requirements and pain points, and then validated and prioritised requirements through an in-depth design workshop, using collaborative ideation to visualise how the tool could work. This led us to develop and launch a prototype, setting up User Groups with local authorities and Local Area Energy Planning practitioners to help shape the design and provide feedback to ensure the tool meets their needs.

Collaborated with local authorities to support Net Zero funding bids

Our engagement highlighted that local authorities need to access funding for innovation in their journey towards decarbonisation, so our newly established Local Area Energy Planning team has actively supported local authorities to apply for relevant funding, reviewing project proposals and providing letters of support. We supported two successful bids, led by Cambridgeshire County Council and Essex County Council, in Innovate UK's Net Zero Living: Pathfinder Places programme, which aims to develop innovative solutions to unlock non-technical systematic barriers in delivering local authorities' Net Zero plans.

Local Area Energy Planning in action: Greater London case study

The Mayor of London has announced the accelerated ambition for London to achieve Net Zero. We have proactively supported the GLA and relevant stakeholders with their climate action plans through participating in five Local Area Energy Planning project workgroups for areas within Greater London, ranging in size from one to nine boroughs. The Tower Hamlets Local Area Energy Plan has been shortlisted for a placemaking award.

Working closely with stakeholders including Local Area Energy Planning practitioners and other utilities, we have provided advice for multiple feasibility studies and collaborated on data sharing, providing data for growth forecasts and developing the format of data outputs so the results are accessible and interoperable for future planning processes.

Outcomes

- Seven local authorities (5.5% of 127 in our areas) progressed Local Area Energy Plans as a result of our support this year
- Two local authorities supported to access early-stage funding
- 154 unique datasets useful for 30 Net Zero use cases published on our tailored Open Data Portal pages, with over 36,312 views and 1,598 unique visitors over six months
- £1m resource efficiency savings forecast for local authorities across our regions over five years due to our digital self-service energy planning tool
- £28m network reinforcement savings forecast over five years as a result of better insights into location, timing and amount of assets needed due to Local Area Energy Planning

Digital self-service energy planning tool is forecast to deliver £6.67 social value over and above every £1 spent over five years, driven by resource efficiency savings and avoided network reinforcement costs

Evolution of our local area energy planning support

2020	2021	2022	2023
• Produced LSOA-level Distribution Future Energy Scenarios (DFES)	• Developed DFES visualisation tool	• Developed Local Area Energy Planning framework	• Established dedicated team • Created tailored Open Data Portal pages • Developed digital energy planning tool

Enabling the Net Zero transition for all

While customers are facing enormous cost pressures and resilience is rising up the agenda, the need to decarbonise remains. LCTs can play a key role in helping customers reduce their energy costs and increase overall resilience. However, customers face a range of barriers in making the switch, from awareness and lack of suitable technology for their housing type, to the cost and effort of installation. We continue to take action to reduce barriers and ensure customers are not left behind in the energy transition, which could leave them facing disproportionately higher energy costs. We also continue to lead by example by reducing our own business carbon impact. To deliver this, we established a continual process of:

Embedding and scaling up initiatives that deliver benefits → Continuing to understand emerging needs → Tackling barriers together through innovation

Leading by example

Embedding and scaling up initiatives that deliver benefits

Scaling Up

The challenge

Our regions are at the forefront of the EV transition, with 36% of all EVs and 36% of all chargers located in our regions, and 50% more EVs in total than in the second largest DNO group. To serve evolving needs, we continue to scale up the benefits of successful initiatives, embed learnings into future work and share them with the wider sector – all while leading by example through our own decarbonisation.

What we did

Reducing customer effort at scale

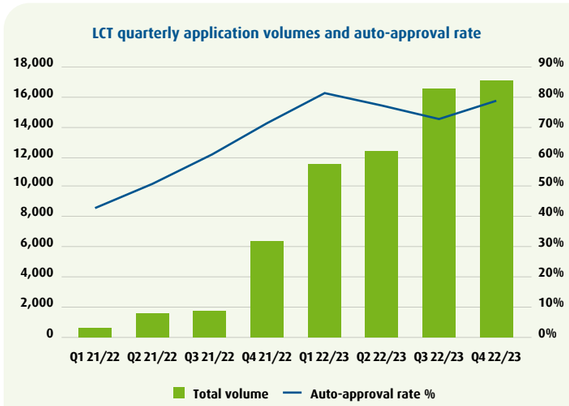
In 2021 we launched the UK's first self-service product for domestic customers seeking an electricity supply upgrade to connect an LCT, reducing the lead time for applications from 10 days to a matter of minutes. We co-designed the tool based on engagement with LCT installers to understand pain points in the customer journey. With the volume of LCT applications we receive multiplying year-on-year, we aimed to enable a great customer experience and to embed a scalable process to serve growing demand in our regions. The service now handles around 7,163 applications per month, with 79% auto-approved in Q4 2022/23, allowing us to efficiently serve seven times more work since launch, at 96.5% satisfaction.

Since embedding the tool, we have **continuously introduced stakeholder-driven enhancements to save customers' time.** This year we:

- **Increased auto-approval rates through applying robotic process automation (RPA).** Having seen the impact of RPA in other connections processes, we applied the technology to quickly process information submitted through industry-standard forms, avoiding the need for manual input. Our trial with EV and Heat forms saw 50% of forms successfully handled by our Read-a-Bot, leading us to scale the approach to solar installations. We then extended our use of RPA to even more complex applications, including those up to 50kW, to allow more business customer applications to pass through the portal.
- **Reducing installer effort through proactive engagement.** We regularly analyse data on applications and use insights to identify installers who do not consistently use the portal, engaging proactively to help them understand its benefits. Due to already high usage rates, this engagement aims to unlock marginal gains. Our top three installers by volume submit 100% of their applications through the portal. We are also partnering with software providers that generate industry-standard form applications for installers, to build an API to enable other high-volume installers to easily submit applications via our portal.

Sharing and embedding learnings

Several years ago we launched the **world's largest trial of commercial EVs**, developing solutions to support fleet electrification across different operating models and charging needs, from Uber to Royal Mail. Through the initiative we developed and launched a self-serve site planning tool to help depot-based fleets optioneer for site electrification. The trial found smart charging could save some fleet depots up to 25% (£95,000) on the cost of connection and up to 12 weeks in the time to connect, as well as helping to manage network impact. Fleet stakeholders attending our sharing events reinforced the need to develop the flexibility market to ensure EV fleets can take part, recognising fleets vary in size and operating model. These actions are now being taken forward by our Flexibility team.



Outcomes

- 96.6 customer satisfaction for LCT supply upgrades – UK-leading
- 96.5% of domestic LCT applications now pass through our portal with 79% auto-approved in Q4 22/23, reducing lead time by up to 10 days, saving up to 511,820 days total since launch
- 15 FTE front-end processing resource avoided while handling seven times more applications compared to 2021
- 10% increase in auto-approval rates between 21/22 and 22/23
- Reducing the time for fleet managers to assess electrification options from 25 days to under four hours when using our self-serve site planning tool – a 99% time saving

Enhancements to our self-service portal for LCT applications delivered £6.70 social value over and above every £1 spent over the past year, driven by resource and time savings

Self-service site planning tool has the potential to deliver £5.39 social value over and above every £1 spent over the next five years, driven by £3.4m avoided reinforcement costs and resource savings and £8.8m societal benefits through reduced carbon emissions and improved air quality

Enabling the Net Zero transition for all

Continuing to understand emerging needs

Leadership

The challenge

The wider electrification of society means new needs are emerging from diverse groups, ranging from micromobility providers to building managers and HGV fleets. The electrification of heat is a key challenge. While heat pump uptake remains behind other LCTs, we can apply our learnings and take early steps to reduce the barriers to customers switching. We set out to understand emerging needs so we could take action to ensure we are not a blocker to the transition. These early-stage initiatives demonstrate how we use engagement to shape our approach.

What we did

Established a new engagement mechanism to understand the needs of customers retrofitting existing estates

We have well-established engagement routes with customers who build new infrastructure, however, customers looking to decarbonise existing estates, such as the NHS, prisons, Ministry of Defence and ports, have not needed to interact with us in the past, and are likely to need additional support through an unfamiliar process. We established a new LCT Forum, bringing together representatives from across sectors to develop deeper insights into their needs, raise their awareness of the support available and identify what additional support they would value.

Built relationships with the property sector to support faster whole-building electrification at lower cost

- Engagement with our Housebuilders Forum highlighted multi-occupancy buildings, from blocks of flats to Victorian terraces, as one of the hardest-to-reach sectors, with complex accountabilities and issues of fairness in allocating capacity and paying for supply upgrades. As a result we launched an initiative to prove the case for whole-building solutions, investigate the blockers to deploying them, and work with market participants and investors to develop sustainable propositions.
- Through engaging with commercial building owners, occupiers and property advisors, we learned that these stakeholders often have ambitions to electrify heating and provide EV charging, but are put off by the time and cost commitment of securing extra capacity. To address this, we joined DESNZ's V2BUILD initiative to explore the potential for EVs to provide two-way flexibility to buildings and the grid, which would provide additional capacity quickly and at lower cost. We are engaging with property owners, managers, occupiers and advisers to understand the technical, commercial, and practical issues, and test their appetite for a building planning tool.
- During our Citizens' Panel on heat decarbonisation last year, customers identified that some types of homes face higher barriers in switching to low-carbon heat, such as smaller homes without the space needed for a traditional heat pump. To tackle space constraints, we launched a customer trial of a compact electric heat battery no larger than a gas boiler, partnering with manufacturer Tepeo and OVO Energy to trial an innovative type-of-use tariff with heating charged earlier in the day at a separate, cheaper rate. We surveyed all customers who applied to take part in the trial to understand their motivations; based on 483 responses we learned that customers were motivated by reducing carbon emissions as well as reducing their bills. We will continue to understand trial participants' experience through a diary study and interviews.

Understanding the emerging micromobility market

Following the launch of e-scooter and e-bike trials, the market in London increased sevenfold between June 2021 and July 2022. We set out to understand the likely future demand for micromobility charging and the support that companies and local authorities might need. Engagement with Transport for London and local authorities highlighted growing interest in the opportunities to reduce congestion and make use of potential charging sites that had previously been discounted because of insufficient space for EVs. We engaged with international micromobility providers to learn from their experience, and with GB providers and business users, including Amazon, to understand the practical challenges of charging. Building on learnings from our commercial EV fleet trial, we are now exploring the potential to build a self-service tool for micromobility providers to support their charging planning.

Outcomes

- 30 customers expected to receive £171,000 total financial benefit over the next five years and 12.5 tonnes lower annual carbon emissions through the trial of compact electric heat batteries
- Deepened understanding of the needs of customers retrofitting existing estates through a new engagement mechanism
- Deepened understanding of property sector and micromobility market stakeholders and their needs, shaping our initiatives

Leading by example

Collaboration

The challenge

When we set our carbon reduction targets, verified by the Science Based Targets initiative, we went beyond the mandatory requirements by including indirect supply chain emissions. We could have excluded these emissions as they only make up 24% of our footprint when including losses, however, they make up 84% of our Business Carbon Footprint when excluding losses. We are working together with our supply chain to drive down carbon intensity per pound spent and enhance the data we use to target actions, ensuring changes make a meaningful impact on emissions.

What we did

We developed deeper insights into individual suppliers' actual emissions to target impactful actions. Last year our analysis found that 50 of our 1,250 suppliers made up 63% of the total 2021 supply chain emissions, guiding us to focus on our highest-emitting suppliers. Spend-based emissions baselining is based on average carbon factors and standards, which do not necessarily reflect suppliers' actual practices, so we developed a supported service to capture a more accurate picture of carbon in suppliers' operations. We tested the service with suppliers during development to ensure it is user-friendly, which also gave us insight into the valuable data that suppliers hold and how they currently measure carbon. We launched the service at our supplier conference, alongside a code of conduct co-developed with suppliers, aligning on common values as well as action.

Through gathering data with the highest-emitting suppliers, we learned that in many areas, suppliers' practices are more sustainable than the average standards assume. For example, suppliers use recycled rather than virgin material in reinstatement, saving three-quarters of the carbon originally assumed. These insights help us to focus our efforts on impactful changes, including using supplier benchmarking to drive carbon reductions, and to measure reductions accurately.

Outcomes

- 21.3% reduction in total supply chain carbon emissions since 2019
- Identified approximately three-quarters of emissions associated with reinstatement already reduced

Tackling barriers together through innovation

Collaboration

The challenge

Public EV charging availability has not kept pace with EV uptake. In 2021 there were 15 EVs per charger, but this has now tightened to 19 EVs per charger, leading to a poorer customer experience for the next phase of EV owners, whose tolerance for teething problems is lower than that of early adopters. Research and stakeholder feedback has reinforced the need to increase the availability and reliability of public EV charging and support great customer experiences by working closely with partners in the end-to-end process.

What we did

Encouraged excellent end-to-end customer experience

Shared power cut data with smart charging providers

Through engagement with chargepoint operators (CPOs) and local authorities we learned CPOs will soon be regulated to provide 99% chargepoint reliability. Given their network reliability is intrinsically linked with our own, and with accurate information key to their success, we collaborated with ev.energy to test co-ordinated customer messaging between the CPO and DNO when a smart charger is affected by a network power cut. This initiative aims to enable a great operational customer experience, for example, by ensuring charging sessions are not scheduled during planned power cuts and providing extra charging in preparation for such events. Our initial research with 100 customers indicated that 88% would find ev.energy power cut notifications useful.

Reduced customer effort when providing information

We are introducing the option for customers to submit a video survey of their property, guided by prompts, to provide key information to our engineers to support a supply upgrade without needing to answer complex questions. We are also creating a customer-friendly calculator that allows customers to answer a few simple questions to generate an estimate of their maximum demand, rather than asking customers to provide this technical information directly. Accurate maximum demand information increases the chance of us getting the upgrade right first time.

Upskilled partners to enable more installations

Challenged conventional roles to streamline the customer journey when installing a chargepoint or heat pump

Last year we launched a project with Octopus Energy to empower accredited third parties to carry out fuse upgrades themselves when installing an LCT, allowing the entire installation to be completed by a single point of contact. This reduces customer handoffs and effort in dealing with multiple organisations through unfamiliar processes and avoids the need to schedule a separate fuse upgrade appointment. We are now scaling the approach with other energy suppliers and exploring national adoption with other DNOs. Through these discussions we identified the opportunity to collaborate further on common standards to support a consistent customer experience nationally.

Supporting engineers to upskill in LCT installations

Our engagement with the Electrical Contractors' Association (ECA) last year highlighted more qualified LCT installers are needed to meet growing demand. Building on our collaboration with the ECA to develop LCT training materials aimed at SME electricians, we joined the ECA's Leading the Charge campaign, contributing videos and raising awareness of the support available. With heat pump installer capacity currently a fraction of EV chargepoint installer capacity, we are also working with the Heat Pump Installer Network to explore developing bespoke training.

Enabled future-ready charging infrastructure to meet growing demand

Unblocked barriers to scaling up public charging

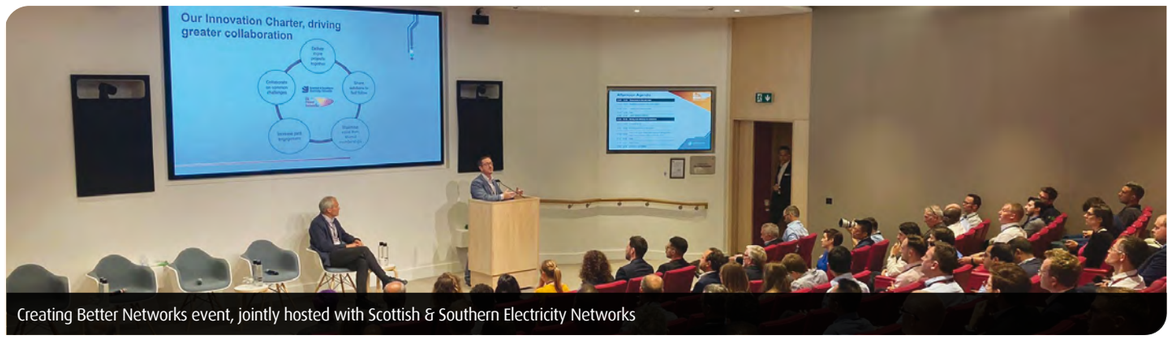
Lack of public charging is one of the most significant barriers to EV uptake. Through our Green Recovery Fund, suitable capacity for up to 1,400 additional chargers at motorway service areas (MSAs) has been unlocked; this pace must be maintained beyond this funding. Engagement with DESNZ, the Office for Zero Emission Vehicles (OZEV) and MSAs identified that existing models require MSAs to upgrade capacity all at once, even though capacity exceeds current demand, and the costs can undermine commercial viability. We developed a new product that allows MSAs to ramp up their capacity (and associated capacity charges) over time, so they only pay for the capacity they need while demand grows, without forgoing access to the final capacity required, and worked with OZEV to develop pre-application support to help MSAs plan the capacity they need over time. We have worked with other DNOs to develop this idea to create a consistent experience for all GB customers and shared our training materials and processes to support national adoption. This included inviting other DNOs to sit in on surgeries where we piloted the approach with customers – the first time we have opened up our processes in this way.

Supported local authorities to bid for Public Sector Decarbonisation funding

We proactively engaged with the funding body to explore how we could provide guidance to applicants to enable more bids to be successful. Working with Net Zero Hubs, we brought bidders together and ran masterclasses to explain the process and the support available, inviting 111 public sector organisations in our regions, with £386m of grants awarded to support decarbonisation in our communities.

Outcomes

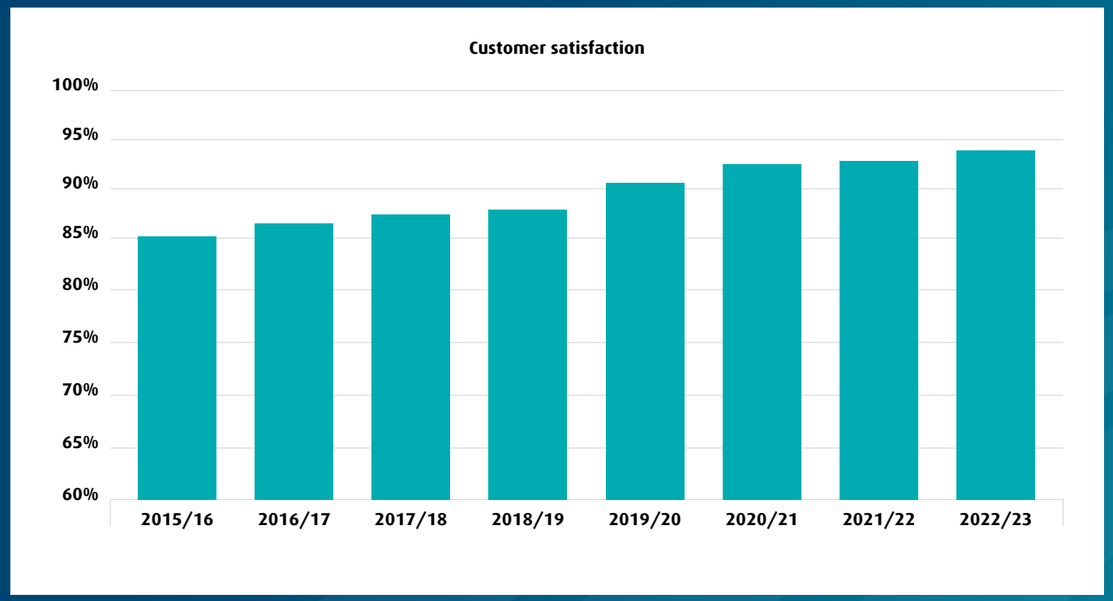
- Maintained 75% average right-first-time fuse upgrades over the last year while volumes grew by 21% – reducing repeat visits, complex handoffs and customer effort
- EV chargers and heat pumps can be installed up to 10 days faster by training installers to carry out fuse upgrades themselves, with 67% reduction in handoffs for heat pump installations and 40% for EV charger installations
- Unlocked local capacity for up to 1,400 additional chargers at MSAs through our Green Recovery funding – a 176% increase on current volumes
- Increased commercial viability for MSAs to invest in charging, through our innovative capacity ramping product
- £386m funding unlocked for public sector decarbonisation in our communities, supported through our proactive guidance



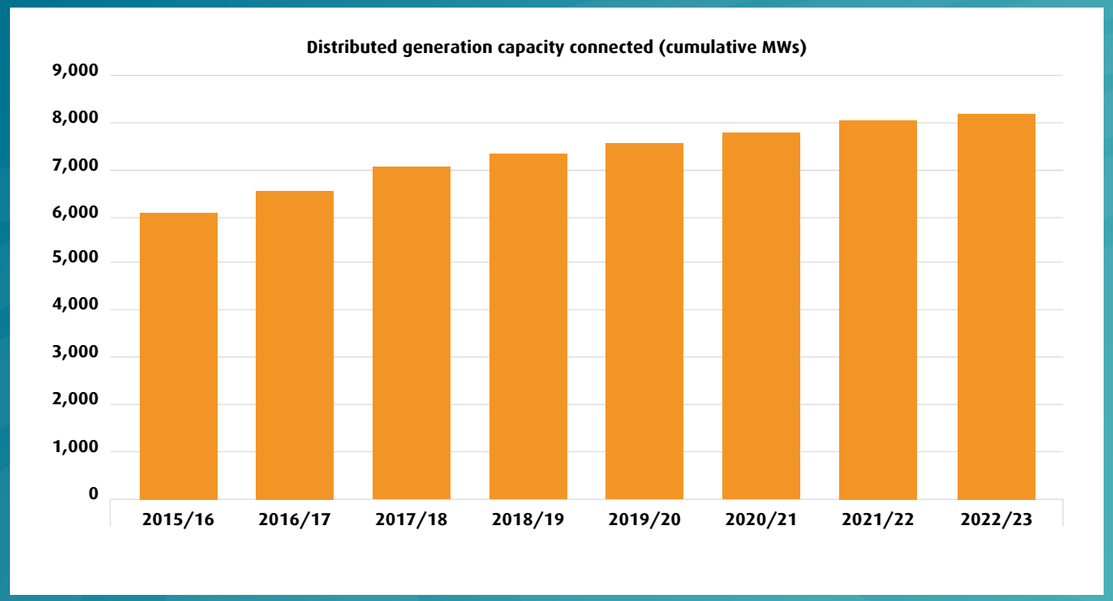
Creating Better Networks event, jointly hosted with Scottish & Southern Electricity Networks

The SECV incentive has helped us evolve our engagement approach, driving better outcomes for customers

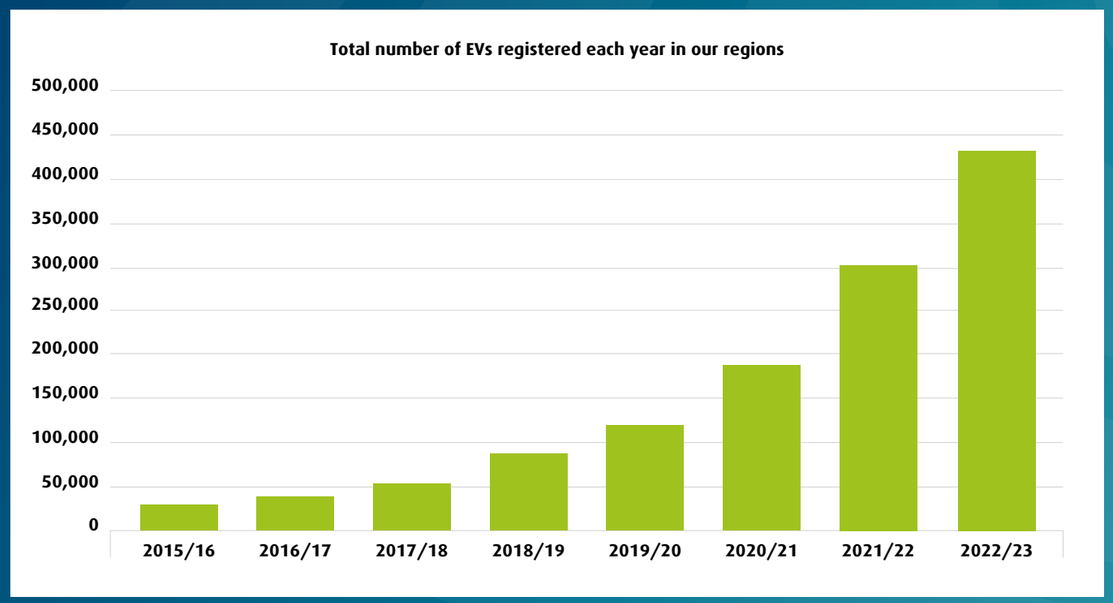
No.1 DNO for customer satisfaction



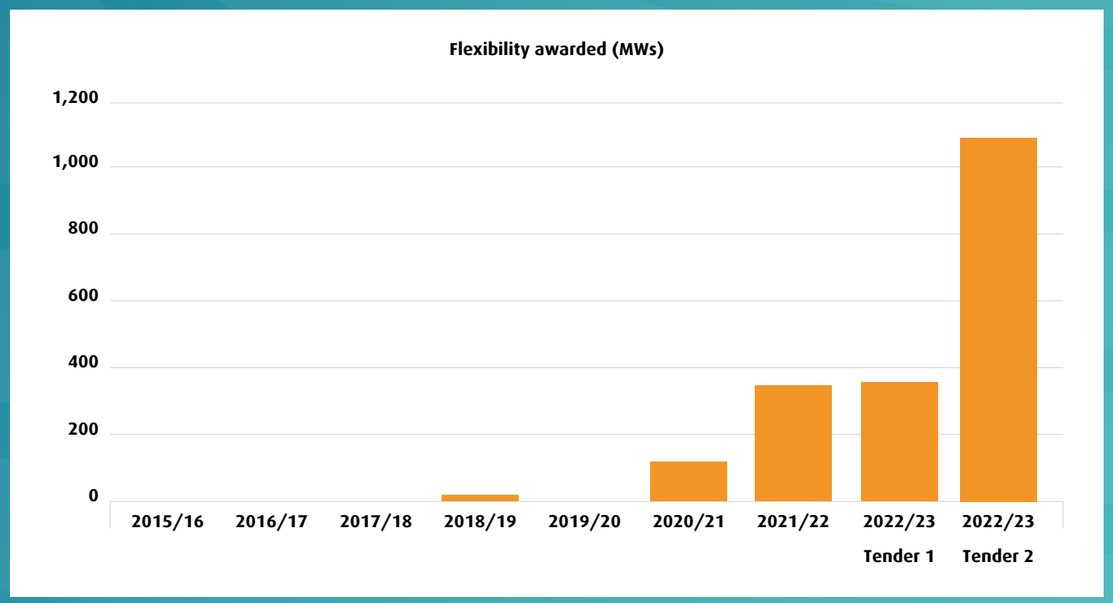
8.16GW of renewable generation connected to our network – enough to power over four million homes



Over 400,000 EVs on the road in London, the East and South East of England this year



Transformed flexibility from idea to reality, with **1.1GW** of flexibility in our latest tender – the UK's largest



These two pages share additional information on the progress we've made thanks to engagement with our stakeholders since the very first SECV.

www.ukpowernetworks.co.uk