

# Distribution Annual Performance Report 2022/23

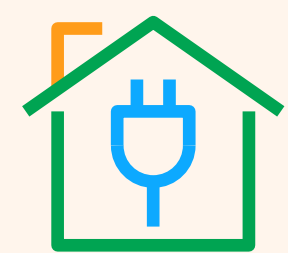


## Our business

We transmit, distribute and connect electricity to and from homes and businesses across our network. SP Energy Networks (SPEN) owns three regulated electricity network businesses in the UK; SP Distribution plc (SPD), SP Manweb plc (SPM) and SP Transmission plc (SPT). This report relates to the performance of our distribution companies, SPD and SPM, during 2022/23.

SPD and SPM distribute power on behalf of energy supply companies through a network of cables and power lines that we own and maintain. We distribute and connect electricity to and from homes and businesses across our network. We work around the clock to keep the lights on 24 hours a day, every day of the year. We serve 3.5 million homes and businesses in three of the UK's largest cities (Liverpool, Glasgow and Edinburgh), as well as three large rural areas (North Wales, Scottish Borders and Dumfries & Galloway). We take electricity generated from power stations, wind farms and other utilities, reduce it to the low voltage needed for homes and transport it through our vast network of cables and power lines. Our distribution network alone has 33,917 substations, 38,228km of overhead lines and 68,699km of underground cables.

We provide customers with new or upgraded connections to our network. For example, to large residential, retail and industrial developments, as well as sports stadia and leisure parks. As the UK builds towards a low carbon future, the nature of the electricity grid is changing. Consumers no longer rely solely on centralised energy generation to meet their electricity demands. There are increasing volumes of smaller distributed generation and Low Carbon technologies such as electric vehicles being connected to the network. As network operators we need to adapt to meet these challenges whilst maintaining low cost, reliable energy distribution for our customers. It is our view that the right way to adapt is to extend the current role of the Distribution Network Operator (DNO), to that of a Distribution System Operator (DSO), which will allow us to plan and operate our networks more dynamically to meet changing customer needs.



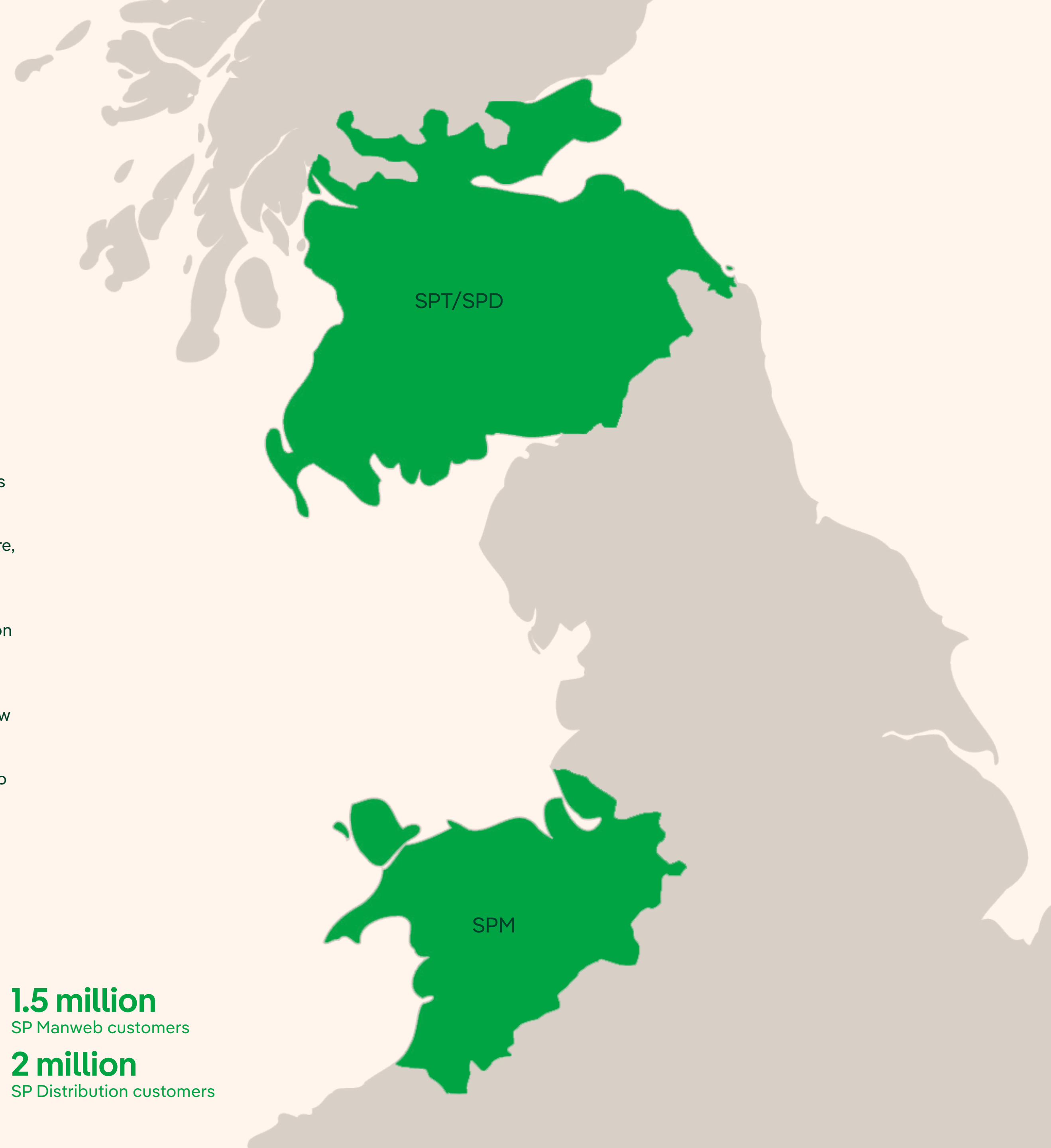
**3.5 million**  
homes and  
businesses in  
three of the UK's  
largest cities



**106,927**  
Our Distribution network  
contains 38,228 kilometers of  
overhead lines and 68,699km  
of underground cables



**1.5 million**  
SP Manweb customers  
**2 million**  
SP Distribution customers



# Contents

## Welcome      Performance Areas      Expenditure and Revenues      Looking forward

Message from our CEO  
2022/23 Highlights  
SPD Snapshot  
SPM Snapshot

Pg05 Health and Safety  
Pg06 Reliability and Availability  
Pg07 Customer Satisfaction  
Pg08 Stakeholder engagement  
Our consumer vulnerability strategy  
Connecting to our network  
Innovation and future networks  
Environment

Pg10 Financial performance  
Pg12 Bill Impact  
Pg13  
Pg14  
Pg17  
Pg21  
Pg22  
Pg24

Pg27 Distribution System Operator (DSO)      Pg30  
Pg28 The Importance of Data and Information      Pg35  
Smart Meters      Pg36  
Our People      Pg38

### Our Performance Indicators



Ahead of Target



On Target



Below Target



Improvement on Previous Year



In line with Previous Year



Deterioration on Previous Year



Substantial deterioration

# Welcome

Message from our CEO

2022/23 Highlights

SPD Snapshot

SPM Snapshot

Pg05

Pg06

Pg07

Pg08



## Message from our CEO

**Welcome to our Distribution Annual Performance report, the final one of the RIIO-ED1 price control period which ran from April 2015 to March 2023. This report outlines how we delivered against the commitments we made in our Business Plan. We are proud of our performance this year and across the price control period. We delivered our commitments and performance improvements and exceeded targets in important areas.**

Our role as a Distribution Network Operator is critical to enabling Net Zero as the number of Electric Vehicles, Heat Pumps and Distributed Generation connected to our network continues to increase at an unprecedented pace. This means we must deliver our business plan commitments in a way which aligns with the decarbonisation priorities of our stakeholders. We are directly supporting the electrification of transport and heat by creating new EV charging infrastructure along some of the UK's busiest motorways, building a new primary substation at the First Bus Caledonia Depot in Glasgow, and supporting hard-to-reach rural communities such as Tanygrisiau in Wales which now has a greener heat network in place enabled by upgraded infrastructure.

As the demand for use of our network grows, it is important that we look for alternatives to reinforcing our network where this is the best option for our customers. Flexibility providers and customers increasingly have the desire and the tools to participate in the energy system, meaning we can work with them to solve network challenges and keep network costs efficient. We are always looking at further ways to support the network using Flexibility to lower bills for customers. In our Demand Shift Trial, we partnered with Octopus Energy to trial and test the potential of domestic demand shifting to a time where there is excess renewable generation. The trial generated a lot of positive interest from our stakeholders and enshrined our commitment to developing new flexibility markets.



We believe our role in the Net Zero transition goes further than ensuring low carbon technologies can connect to our network, and in March 2023 we published our Just Transition Strategy. Our strategy is the first of its kind for a UK DNO, and it sets out plans and principles we have to deliver a fair and equitable transition to Net Zero.

Our next report will be the first we publish under the new RIIO-ED2 price control framework, where we have worked with Ofgem and our stakeholders to set our targets and commitments at levels that are even more challenging and will push our performance improvements even further. We will tackle these challenges head on and, above all, will remain committed to serving our customers and providing exceptional value for money – continuing to deliver 99.99% reliability levels for less than 40p per day.

Vicky Kelsall  
CEO, SP Energy Networks

# 2022/23 Highlights

**Customer Service** – We continually strive to improve and maintain our position as an industry leader in customer service.

## 9.15/10

### Customer satisfaction score

We have continued our progression to be a leader in customer service across the UK, once again outperforming the maximum reward target set by Ofgem



## 34

### Year In Industry (YINI) placements

To compliment our various trainee programmes, we have continued to provide ongoing STEM and career development to support educational facilities resulting in 34 school leavers and undergraduates joining the vocational placements through the popular Year in Industry Placement scheme to provide them with valuable work

## 7 Years

### of Planet Mark

Our Business Carbon Footprint has been accredited Planet Mark's external verification certificate for the 7th year in a row



## 91%

### of all complaints were resolved within 1 day



**Service Delivery** – We have delivered exactly what we said we would in our business plans, continuing to operate a safe and reliable network while saving customers money.

## Support EV rollout

Ensuring people benefit from the wide scale EV (Electric Vehicles) uptake by finding innovative and cost-effective ways of developing, managing and operating EV charging infrastructure through our various projects (e.g. Project CHARGE)



## We connect over 1/4 of all GB distribution connected wind

SPEN are at the forefront of decarbonising our energy system having connected over 2.6GW of wind to our distribution networks



## 36p per day

SPEN's Distribution component of domestic customer bills is around 36p per day – less expensive than a Netflix subscription. Average customer bills have also fallen by 9.5% in real terms since the start of the current price control



## 99.9%

### Our electricity supply is available 99.9% of the time



# SPD Performance Snapshot 2022/23

In the final year of ED1, we successfully achieved what we set out to in our business plan commitments, going further in reliability and availability, achieving significant improvements in our Customer Satisfaction scores, and delivering an enhanced service to our Connections customers. Throughout this document we outline our successes, and our plans to go further in ED2.

## Safety

The health and safety of the public and of the people who work on our network is paramount. Throughout ED1 we have complied with legislation, actively engaged with 3rd parties and members of the public to enhance safety awareness, and continued to deliver our Occupational Health monitoring programme.

## Environmental

Going above and beyond in our environmental commitments, since the start of ED1, we have achieved a 42% reduction in our combined (SPD & SPM) carbon footprint, excluding losses.

## Innovation

Innovation is at the core of what we do, and we continually identify opportunities to deliver benefits through innovation. In SPD we are delighted about the progress of our innovation portfolio, including one of our flagship projects LV Engine. The project aims to trial innovative Smart Transformers within secondary substations as the central point of an active 11kV and LV network. The performance and strategy were tested successfully at Power Networks Demonstration Centre (PNDC) and are now planned for installation.

## Our snapshot SPD

			Actual (in Year)	Status	Year on Year Trend	Comment
Reliability and Availability	Customer interruptions	Recorded per 100 customers in 2022/23	36.3	●	↑	Exceeding our CI Regulatory target of 49.8 by 27.1%
	Customer minutes lost	Average number of minutes our customers had their supply interrupted	25.4	●	↑	Exceeding our Regulatory CML target of 39.8 by 36.1%
Customer Satisfaction	Customer Satisfaction survey	score out of 10	9.10	●	↘	This is 10% better than the regulatory target of 8.2. Overall ranked 7th place among DNOs.
Connections	Time to quote	(single premises)	5.33 days	●	↘	Our aim is to reduce how long it takes to provide a connection offer and the time it takes to make it all happen. This year we took on average less than 5 days to turnaround our connection quotations.
	Time to connect	(single premises)	32.07 days	●	↑	
	Incentive on Connections Engagement (ICE)		No penalty	●	→	
	Number of metered connections reported		3,682 MPANs	●	→	
	Number of unmetered connections reported		2,261	●	→	
Stakeholder Engagement and Social Obligations	Stakeholder Engagement and Consumer vulnerability	score out of 10	4.5	●	↘	We continue to engage with our vulnerable customers and stakeholders.
Financials	Unrestricted Domestic Tariff Charge for a typical domestic customer		£82.11			Our daily charges are considerably cheaper than a TV licence, or typical domestic broadband services.
	Total Expenditure		£179.3m			
	Percentage of allowed expenditure		94%			
Network	Number of customers		2,018,597	●	↑	
	Total network length		59,240km	●	↑	

● Ahead of Target

● On Target

● Below Target

↑ Improvement on Previous Year

→ In line with Previous Year

↘ Deterioration on Previous Year

↓ Substantial deterioration

# SPM Performance Snapshot 2022/23

In the final year of ED1, we successfully achieved what we set out to in our business plan commitments, going further in reliability and availability, achieving significant improvements in our Customer Satisfaction scores, and delivering an enhanced service to our Connections customers. Throughout this document we outline our successes, and our plans to go further in ED2.

## Safety

The health and safety of the public and of the people who work on our network is paramount. Throughout ED1 we have complied with legislation, actively engaged with 3rd parties and members of the public to enhance safety awareness, and continued to deliver our Occupational Health monitoring programme.

## Environmental

Going above and beyond in our environmental commitments, since the start of ED1, we have achieved a 42% reduction in our combined (SPD & SPM) carbon footprint, excluding losses.

## Innovation

Innovation is at the core of what we do, and we continually identify opportunities to deliver benefits through innovation. This year saw the successful completion of two flagship innovation projects, Charge and Angle-DC, funded through the Network Innovation Competition (NIC) mechanism. Also, the new Strategic Innovation Fund (SIF) funding mechanism is now available and we were delighted to receive funding for our D-suite innovation project. More on our innovation activities on page 22.

## Our snapshot SPM

			Actual (in Year)	Status	Year on Year Trend	Comment
Reliability and Availability	Customer interruptions	Recorded per 100 customers in 2022/23	30.3	●	↑	Exceeding our CI Regulatory target of 35.7 by 15.2%
	Customer minutes lost	Average number of minutes our customers had their supply interrupted	31.9	●	↑	Exceeding our Regulatory CML target of 35.0 by 8.7%
Customer Satisfaction	Customer Satisfaction survey	score out of 10	9.20	●	↘	This is 12% better than the regulatory target of 8.2. Overall ranked 5th place among DNOs.
Connections	Time to quote	(single premises)	5.81 days	●	↘	Our aim is to reduce how long it takes to provide a connection offer and the time it takes to make it all happen. This year we took on average less than 5 days to turnaround our connection quotations.
	Time to connect	(single premises)	33.27 days	●	↑	
	Incentive on Connections Engagement (ICE)		No penalty	●	→	
	Number of metered connections reported		3,286 MPANs	●	→	
	Number of unmetered connections reported		1,223	●	→	
Stakeholder Engagement and Social Obligations	Stakeholder Engagement and Consumer vulnerability	score out of 10	4.5	●	↘	We continue to engage with our vulnerable customers and stakeholders.
Financials	Unrestricted Domestic Tariff Charge for a typical domestic customer		£98.94			Our daily charges are considerably cheaper than a TV licence, or typical domestic broadband services.
	Total Expenditure		£205.9m			
	Percentage of allowed expenditure		105%			
Network	Number of customers		1,531,042	●	↑	Not all electricity networks are the same. Large parts of the SPM network are configured as an interconnected mesh whereas other distribution networks are mainly radial.
	Total network length		47,687km	●	↑	

● Ahead of Target

● On Target

● Below Target

↑ Improvement on Previous Year

→ In line with Previous Year

↘ Deterioration on Previous Year

↓ Substantial deterioration



# Performance Areas

Health and Safety	Pg10
Reliability and Availability	Pg12
Customer Satisfaction	Pg13
Stakeholder engagement	Pg14
Our consumer vulnerability strategy	Pg17
Connecting to our network	Pg21
Innovation and future networks	Pg22
Environment	Pg24



# Health & Safety

The health and safety of the public and of the people who work on our network is paramount. We pride ourselves on our excellent track record and our rigour in maintaining this world class level of performance.

## Vision and culture

We have a duty to ensure that our infrastructure is safe, and all of our operations ensure the health and safety of everyone who comes into contact with its activities. Our vision is to deliver the highest standards of Health and Safety performance, where no injury or ill health is caused by our activities. The wellbeing of our customers, our people, our suppliers, and the public is our number one priority. We pride ourselves on sharing learning and pushing for best practice in everything we do and as such we are committed to promoting good health, safe behaviour and demonstrating care for the environment. Our safety culture is led by our senior leadership team, defined by our Health and Safety Essentials, and driven by the personal accountability and commitment from every employee.

## OHSAS 45001

SPEN successfully maintained our OHSAS ISO 45001 Certification in 2022 following a comprehensive audit process by our external certification body. There were numerous strengths identified, reflecting robust working practices and procedures, across our Business. By having an ISO 45001-certified management system our business can rapidly respond to emergency situations whilst also establishing, implementing, and maintaining processes to mitigate hazards and reduce risks in the long-term.

## Making our networks safer

In 2022/23 we continued to reposition services and cables in older flats and tenement buildings to make them safer as part of our ongoing programme. We have also made progress on our programme to eradicate low overhead line clearances across roads. We actively engage with the Health and Safety Executive to communicate progress on these initiatives. Our innovation focus remains firmly centred on our customers and stakeholders, who shape both our Innovation Strategy and innovation project portfolio, helping improve health and safety and delivery of our Business Plan.

## Innovation in Safety

We are working in partnership with the Engineering Innovation centre and Sheffield Hallam University to build on systems and leverage the advancement in the standardisation of network data, through which a smart-phone App, can utilise the integrated sensors to alert users when a user is close to sensitive pieces of equipment. This will include (but not be limited to) overhead lines, underground cables, and substation perimeters.

Also of note, was the Utility Strike Avoidance Working Group, which is a forum that met regularly with contractors for sharing best practices and ideas to reduce cable strikes.

## Guarding Physical and Mental Health

We strongly recognise the 'Health' in health and safety and take measures to promote health and wellbeing for all our staff, promoting fitness and health as a lifestyle choice with initiatives such as the daily mile and access to gym facilities. Mental Health, wellbeing, and the impact they can have continued to be a key focus and we provided a range of training and support services to staff.

## Public Education

Our Public Safety engagement continues around the 4 Key themes, focusing on the information driven by current data/trend analysis and planning for our 2023 engagement. We are looking to maximise the use of social media, Influencers, and online channels to ensure the right people are seeing the safety advice and continue our support and partnership working with the Energy Networks Association ENA.

Customers	Agriculture	Construction	Specialist Trades
<ul style="list-style-type: none"> <li>Essential Power safety advice for our customers</li> <li>DIY and Gardening</li> <li>Power wise website and Parent Influencers</li> <li>Continued promotion of 105 Hotline</li> </ul>	<ul style="list-style-type: none"> <li>Farm and Rural community Safety</li> <li>Agricultural Shows</li> <li>Farm life Influencers</li> <li>Famous Farmer videos</li> <li>Royal Highland Educational Trust</li> <li>Overhead Line Collison Avoidance project (Engineering Innovation Centre and Sheffield University)</li> </ul>	<ul style="list-style-type: none"> <li>Significant growth in construction industry</li> <li>Trade Associations and House builders</li> <li>Construction Equipment association</li> <li>Utility Strike avoidance group</li> <li>Look out-Look up campaigns</li> </ul>	<ul style="list-style-type: none"> <li>Construction Equipment association/Trade associations</li> <li>Federation of Window Cleaners</li> <li>Targeted Social Media campaigns (Relevant interests and Job roles)</li> </ul>



To view, visit the SP Energy Networks website.

Agricultural events provide us with an excellent opportunity to speak to farm workers, contractors, lorry drivers and hiab operators.

## Agricultural shows

**We are continually looking at ways to improve and better deliver our electrical safety advice to members of the public and specialist trades whose day-to-day work may bring them into close proximity with our electricity network.**

During 2023, we attended several events such as the Royal Cheshire show, The Royal Highland show, and the Oswestry Hot Air Balloon festival. These events provide us with an excellent opportunity to speak to farm workers and contractors, lorry drivers and hiab operators and with new technology on the rise we now also engage with pilots and drone operators.

At the Royal Highland show, we put on a real-life demonstration showing an excavator coming into contact with an overhead line. This allows us to run through three different real-life scenarios with the audience and have open discussions about previous incidents. We also have our safety leaflets and cab stickers available which are very popular with the audience after the demonstration. A video of this year's demonstration can be seen on our new overhead lines safety webpage.



## SP Energy Networks partnership with Scottish Association of Young Farmers Club

**The focus of the SP Energy Networks partnership with the Young Farmers is to develop a longer-term, strategic relationship with the farming community, to raise awareness of safety around electrical network infrastructure.**

The Scottish Association of Young Farmers Clubs (SAYFC) is Scotland's largest rural youth organisation with 3,500 members. The partnership with SAYFC provides an opportunity to provide branded Health and Safety material for their farm ambassadors and contribute to in-person H&S awareness sessions through the Young Farmers Clubs and their annual conferences.

A year-long customised communication plan will feature SP Energy Networks messaging about farming safety around electrical network infrastructure. SP Energy Networks branding, and messaging will also feature as part of the Young Farmers' presence at the two biggest agricultural shows in Scotland at Ingliston and Ayr.



# Reliability and Availability

A reliable supply of electricity to homes and businesses is priority number one; a message that our stakeholders consistently endorse. This includes when the network is put under pressure by extreme weather events.

## Enhancing network resilience ●

We are currently ahead of our commitments to Ofgem and the Department for Energy Security and Net Zero (DESNZ), having achieved 100% compliance with the flood resilience standard (ETRI38) in 2015. Subsequently, updated flood modelling and maps have been issued by the relevant environmental agencies. A further 82 sites were identified as potentially at risk of flooding; 20 of these have had detailed risk assessments which confirm they are flood resilient, with mitigation work completed at a further 12. We are currently assessing the implications of the latest issues of ETRI38 which recommends additional level or resilience to substations with 10,000 customers. This is another significant step towards our long-term goal of making our whole network resilient to severe weather events.

## No power cuts of more than 12 hours ●

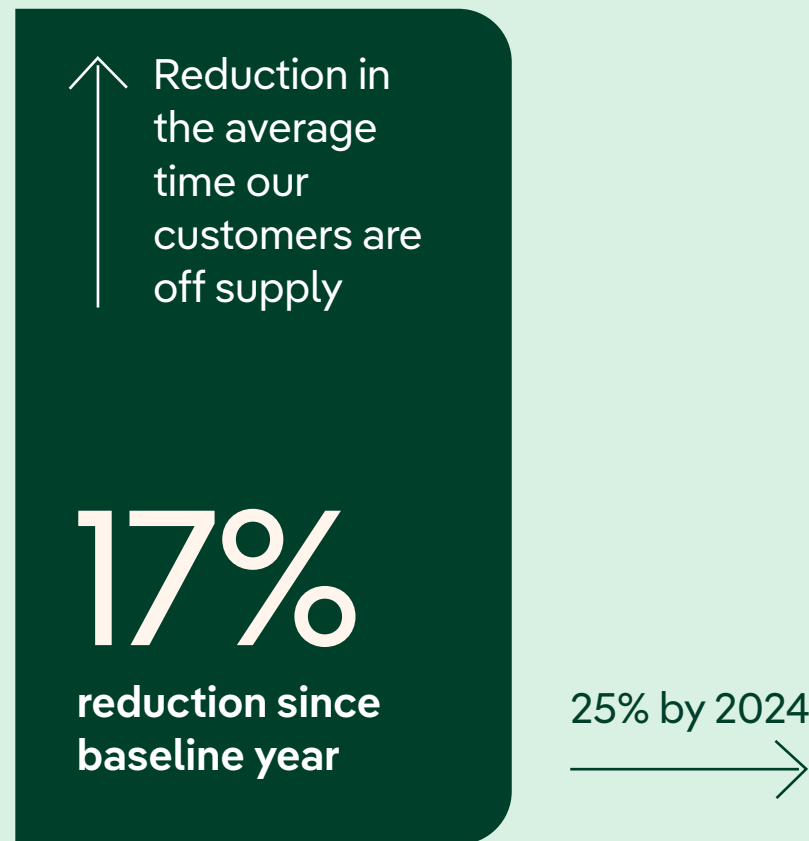
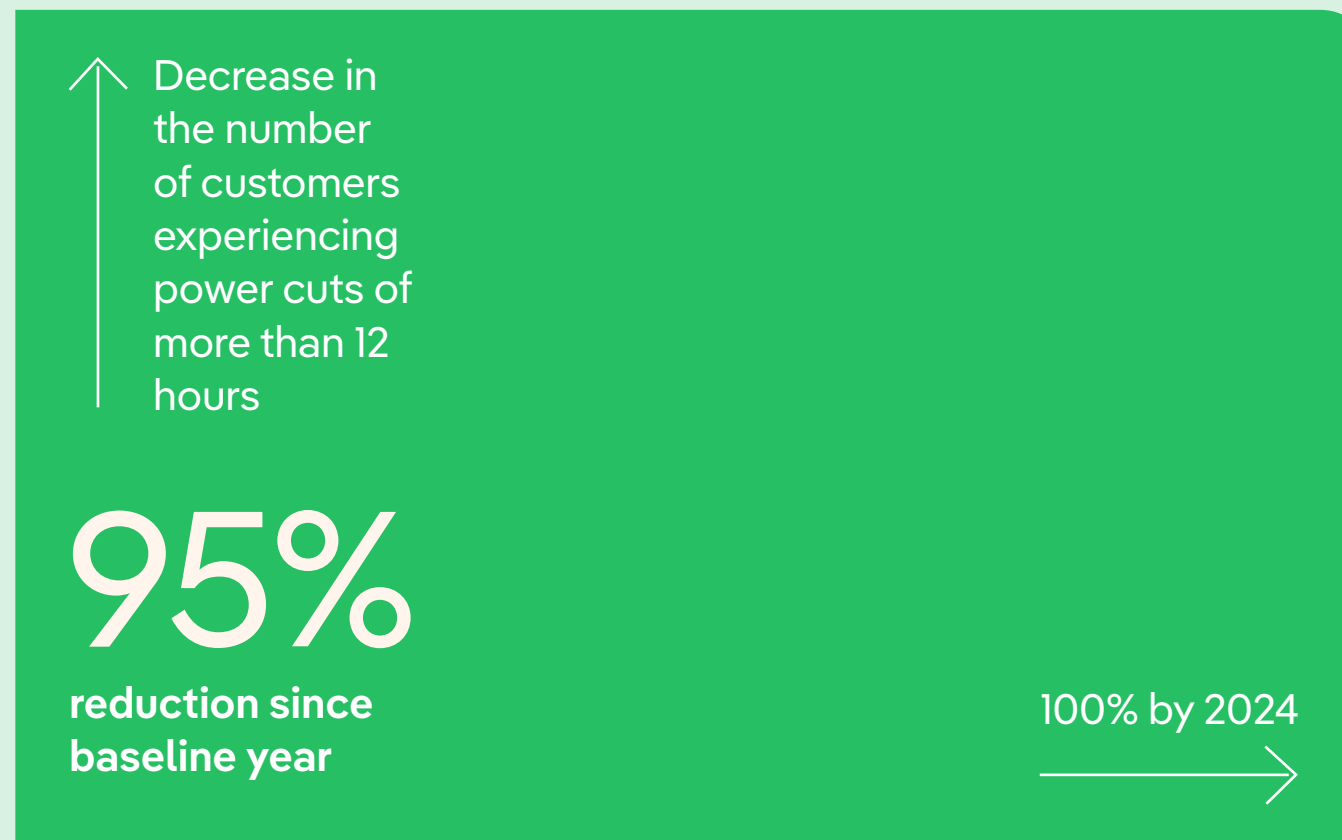
Since the start of EDI, we have seen a reduction of 95% of occurrences where customers have experienced a power cut over 12 hours, falling marginally short of our stretching target of 100%.

## Fewer and shorter power cuts ●

Since the start of EDI, our customers have seen a reduction of interruptions of 24% and the duration of these interruptions has reduced by 37% exceeding our commitment.

## APRS (Automatic Power Restoration System)

APRS is an adaptive technology which will aim to restore as many customers as possible utilising available Network controllable points (NCPs). APRS was first deployed in SPD. Since its introduction we have seen a reduction in customer minutes lost of 762k minutes and an average restoration time of 99 seconds on the circuits viable for deployment. APRS is currently being rolled out to circuits in SPM and will be available by the end of this year. This will provide the same benefits to our customers by reducing the time off supply should they experience an interruption.



## Case Study: Distributed restart

SPEN have led a cross-licence project to successfully demonstrate trials for re-energising the electricity network using pioneering renewable technologies – thus enabling them to contribute to system restoration following the highly unlikely event of a full or partial blackout. The capability to restart the power grid in the event of a partial or total shutdown of the national transmission network would traditionally be provided by large transmission-connected fossil fuel power stations. Now the traditional approach will be complemented with the Distributed Energy Source (DER).

The innovation funded Distributed Restart project – a partnership between SP Energy Networks, National Grid ESO and specialist energy consultancy TNEI – explored the use of DERs such as hydro, solar, wind, biomass, or Battery Energy Storage Systems (BESS), to start the energy system. We conducted a trial at our Redhouse substation as part of the final phase of this world-leading project to show how a range of smaller distribution connected energy sources could be used to restore power during an electricity system restoration event. This trial utilised a BESS near Glenrothes to re-energise the local distribution and transmission network isolated from the main grid, without affecting any connected customers for the duration. The ‘power island’ created by the BESS grew to allow an additional DER in Middle Balbeggie Solar to contribute to the stability of the island.

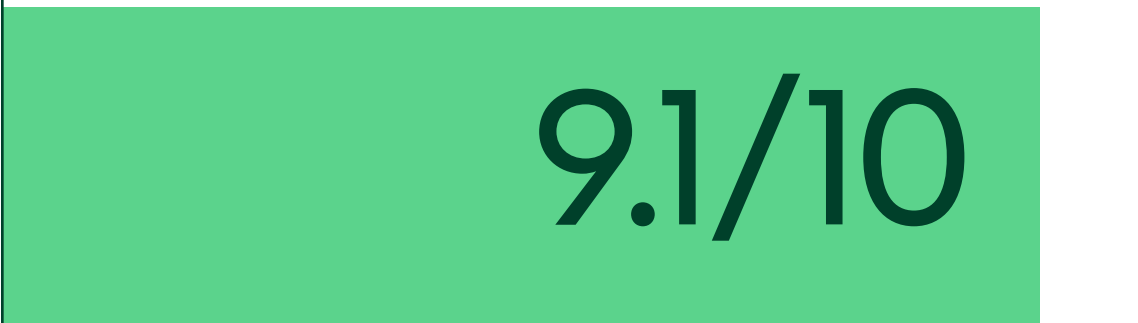
**This world first trial paves the way for a radically different approach to system restoration, using renewables to drive down the time it would take to restore the network, help to reduce costs and push society forward towards Net Zero emissions targets.**

# Customer Satisfaction

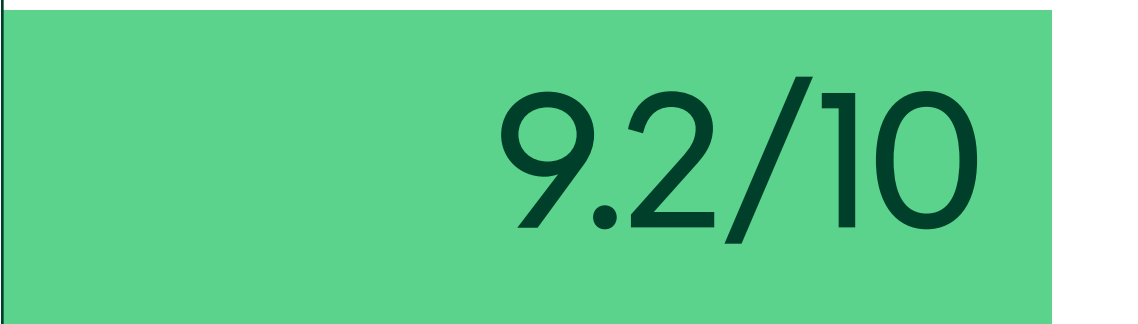
Our customers have every right to expect a good experience when they interact with us – whatever the reason. We are committed to delivering this, and to improving year-on year against the standard industry-wide metrics.

We set a stretch target to score 9.42 / 10 for Customer Satisfaction in Ofgem’s survey of DNO performance for 2022/23 and to be a leader in Customer Service across the UK. Whilst we didn’t reach this stretch target this year, we achieved 9.10 in SPD & 9.20 in SPM, which was ahead of the maximum reward threshold set by Ofgem, and saw SPEN come out 2nd overall in the ranking of DNO’s. In RIIO-ED2 we are widening our scope, targeting 9.4 / 10 for satisfaction, no matter the channel or service.

SPD customer satisfaction in 2023



SPM customer satisfaction in 2023



● Ahead of Target ● On Target ● Below Target

## Complaint handling ●

Our customers also need to trust us to handle any complaints properly. We handled 5,806 complaints with 91% resolved within 1 Day against a target of 80% and 98% resolved within 31 days against a target of 95%. We received zero repeat complaints and none of the 3 complaints which were escalated to the Energy Ombudsman were upheld. We’ve outperformed against our targets in each year of RIIO-ED1 and have set RIIO-ED2 targets that will continue to outperform against the tighter targets set.

## Responding and communicating ●

Our customers need to know that they can pick up the phone and talk to us. We have received 745,323 calls this year – of which 590,611 relate to power cuts. From the 590,611 only 1.01% were abandoned. In RIIO-ED2 we will continue to target an abandoned rate of 1% or less, whilst widening our channel offering to offer customers an omni channel offering, using their preferred method of contact where that’s available.

## Some of our RIIO-ED2 Customer Satisfaction Highlights

We will deliver satisfaction levels of 9.4 out of 10 by the end of ED2.

91% of complaints resolved in one working day. At least 98% of complaints resolved in 31 days.

When a customer contacts us to report a power cut or an emergency, we will respond in 10 seconds or less, regardless of the channel used.

We will enable customers to register their preferred method of contact and language and will use this during any contact.



# Stakeholder engagement

Our strategy for stakeholder engagement throughout RIIO-ED1 has allowed us to take full account of our customer and stakeholder views in developing our future plans, in the most fair and efficient way. Over this period, we have significantly transformed the way we conduct engagement – shifting from tactical, project specific engagement to broad, tailored, and relevant engagement to deliver real business change based on stakeholder need.

We engage with a huge range of customers and stakeholders every single day to clearly understand what they require both now and in the future. What is important to our stakeholders is important to us, and their feedback and priorities shape our business decisions.

Those priorities have been aligned to three strategic pillars which provide a consistent focus for our business and enable us to deliver our ambitious agenda. To support this framework, we have a future vision for our business which articulates the role we must play, both now and in the future, as we enter into RIIO-ED2.

The page that follows covers various engagement activities and resulting initiatives that we have undertaken under each of these strategic pillars.

## Our Strategic Pillars



Develop a safe, secure and resilient network that's ready for Net Zero

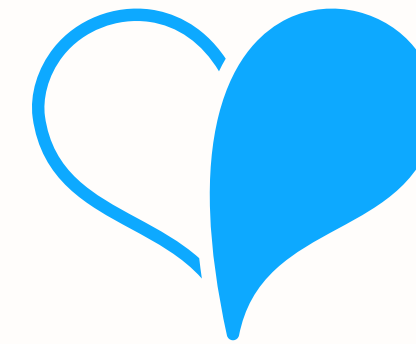
Network investment & development



Security of supply



Supporting decarbonisation



Be the trusted partner for our customers, communities and stakeholders

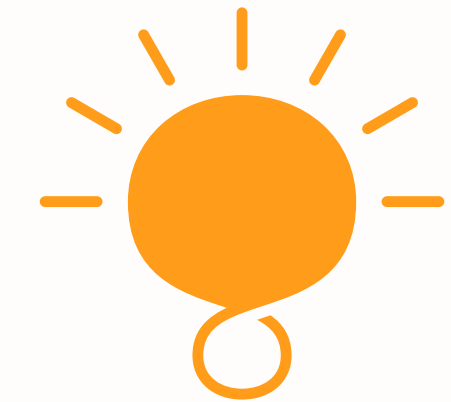
Customer service



Vulnerability



Work with our communities and stakeholders



Innovate to ready our business for a digital and sustainable future

Data & digitalisation



Investing in our people and their skills



Sustainability



## Develop a safe, secure and resilient network that's ready for Net Zero

Close collaboration with stakeholders has been instrumental in shaping projects that facilitate the energy system transition, from design to delivery, and enabling us to invest in the right initiatives, at the right time and in the right place to maximise customer impact and remove the barriers to achieving Net Zero.

For example, stakeholders – across a range of sectors including local authorities, emergency services, businesses, and housing developers – have told us the decarbonisation of transport and heat are priorities for them.

We are supporting the shift to electric vehicles by creating new EV charging infrastructure along some of the UK's busiest motorways; building a new primary substation at First Bus' Caledonia Depot in Glasgow, supporting the charging infrastructure needed for a new fleet of 300 electric buses; and we also introduced the ConnectMore tool to provide customers with more insight into optimal locations for EV charging connections.

For heat, we have upgraded the heat network in Tanygrisau, Wales, to be greener; reinforced the local infrastructure in Moodiesburn in Scotland to allow new housing to employ heat pumps; and gained key insights into customer behaviour through the Re-HEAT initiative, empowering our planners to remove barriers to the rapid take-up of heat pump technology. We have also developed a framework for the use of large-scale thermal energy storage (LTES) across the UK that could reduce heating costs and provide valuable balancing for the energy system.



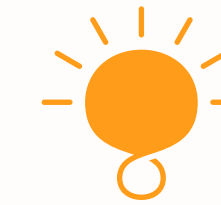
## Be the trusted partner for our customers, communities and stakeholders

As a partner of the Net Zero North West (NZNW) Cluster Plan, SPEN is leading the planning and assessment of network needs and consulting on project feasibility based on available network capacity. We are also leading one of the key workstreams detailing the state of the network in the Northwest and the range of opportunities available for partners to take forward their projects cost effectively while minimising delays; the output for this will directly inform the connection work required for 35MW of hydrogen production by 2025, expanding to 90MW by 2030.

We have also created Strategic Optimiser teams to act as a conduit between local authorities and the technical optioneering for Low Carbon Technology (LCTs), offering significant time and cost efficiencies, through local authorities having access to expert electricity network knowledge.

In the wake of Storm Arwen, we engaged with former UK Energy Minister Rt Hon Charles Hendry CBE to lead a review of our operational response, focusing on the rural communities worst affected.

His recommendations, based on the input of 150 stakeholders, led to the establishment of new feedback loops, named contacts with Local Resilience Forums (LRFs) and Local Resilience Partnerships (LRPs) to ensure continuous improvement, and scenario mapping and stress-testing of capacity across our IT platforms, among others.



## Innovate to ready our business for a digital and sustainable future

SPEN has revolutionised its LV network monitoring by introducing the LV Support Room. Utilising the bespoke LView/Navi platforms, this system provides real-time data produced by smart meters and substations to pinpoint where faults are occurring, allowing response before they disrupt customer supply.

We have recently implemented an [Open Data Portal](#), freely accessible to all customers and stakeholders from our website. The Portal is our centralised repository for data that we will be sharing openly, allowing users to easily search our open data catalogue, along with providing detailed metadata and the ability to consume our data via an API.

In March 2023, we published our Just Transition Strategy, setting out the plans and principles we have in place to deliver a fair and equitable transition to Net Zero. This strategy is the first of its kind for a UK DNO and responds to stakeholder expectations that we establish a clear plan to deliver our bold ambitions.

## External accreditation

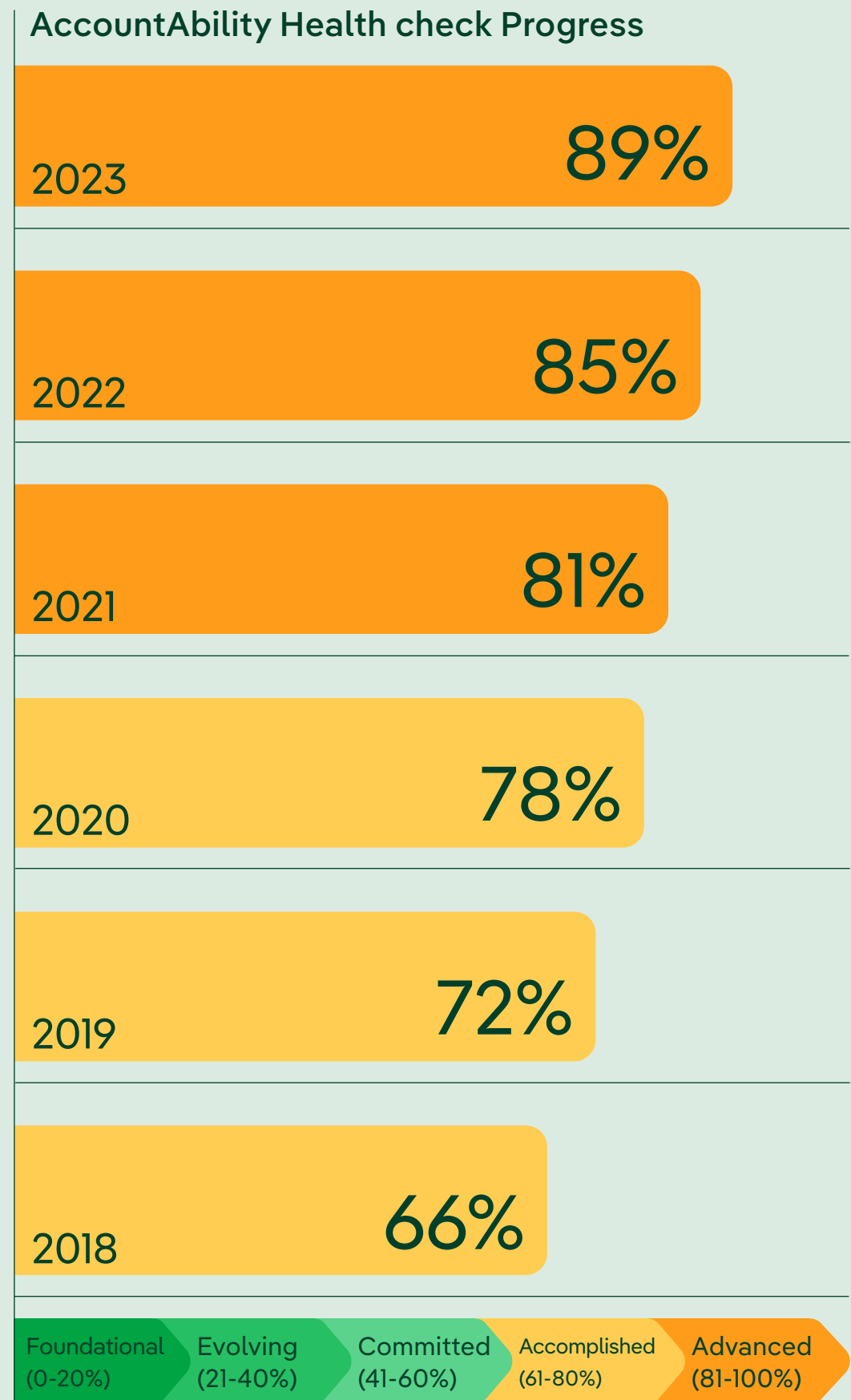
To ensure our strategy continues to be fit for purpose, we enlist AccountAbility, an independent company, who own the global standard for stakeholder engagement, to conduct a full health check audit of our engagement strategy and processes. We do this to support our programme of continuous improvement and the development of high-quality stakeholder engagement practices.

This robust and comprehensive assurance and accreditation programme is directly aligned to the principles of inclusivity, materiality, responsiveness, and impact against the AA1000SES global standard for stakeholder engagement.

We are delighted to have once again improved our AccountAbility Health check score in 2023, achieving an 89% rating, one of the highest scores ever achieved globally.

Looking ahead, we remain fully committed to our work with AccountAbility, and have embedded this commitment within our future business plans to ensure we continue to learn from best practice and develop industry-leading engagement with our customers and stakeholders.

**89%**  
Health check rating achieved in 2023



## Responding to the needs of our stakeholders

Stakeholder-driven Strategic pillar	External environment	How we have responded
<p><b>Develop a safe, secure, and resilient network that's ready for Net Zero</b></p> 	<p>National and regional Net Zero ambitions</p> <p>Regulatory pressures – lobbying to invest ahead of need</p> <p>Decarbonisation – increased uptake of low carbon technologies</p>	<p>Implemented stakeholder feedback to shape £60m of green investment across our network areas</p> <p>Re-Heat project to support large-scale electrification of heat without traditional network reinforcement</p> <p>Successfully trialled different flexibility services to drive residential engagement and adoption with FUSION and Demand Shift projects</p>
<p><b>Be the trusted partner for our customers, communities, and stakeholders</b></p> 	<p>Communities needing support to meet their Net Zero targets</p> <p>Leaving no one behind on the journey to Net Zero</p> <p>Extreme weather events – protecting our customers and those most vulnerable</p>	<p>Worked with local authorities and governments in Wales and Scotland to create blueprint processes and plans to help them achieve Net Zero ambitions</p> <p>Launched a new Customer Relationship Management (CRM) platform, helping us to deliver industry-leading customer service, with Priority Services Register (PSR) services key</p> <p>Used our learnings from Storm Arwen to develop robust plans to protect our customers and communities from future events</p>
<p><b>Innovate to ready our business for a digital and sustainable future</b></p> 	<p>Data &amp; digitalisation</p> <p>Greening the supply chain</p> <p>Recognition of the need for a just transition</p>	<p>Launched Open Data Portal providing stakeholders with data sets to support their Net Zero journey</p> <p>Integrated tools to support supply chain stakeholders to better manage their carbon footprint</p> <p>Launched a new Just Transition Strategy to ensure we deliver fair and equitable outcomes for our customers and stakeholders as we strive for Net Zero targets</p>

## 2022/2023 industry achievements

- Global leaders in stakeholder engagement, **achieving 89% in our 2023 AccountAbility audit**, one of the highest scores ever achieved globally.



- Leading the industry in the creation and adoption of a consistent approach to Social Return on Investment (SROI).

- Seven-year milestone award – PlanetMark™ certification** and Winner of the 2022 Best Company Award, recognising the crucial role we are playing in supporting regional and national ambitions in reaching Net Zero and the energy system transition.



- BSI Customer Service Kitemark** for the 5th year in a row.



- Amongst the **first group of nine organisations to gain certification to the new BSI Inclusive Service Kitemark** demonstrating our commitment to supporting vulnerable consumers.

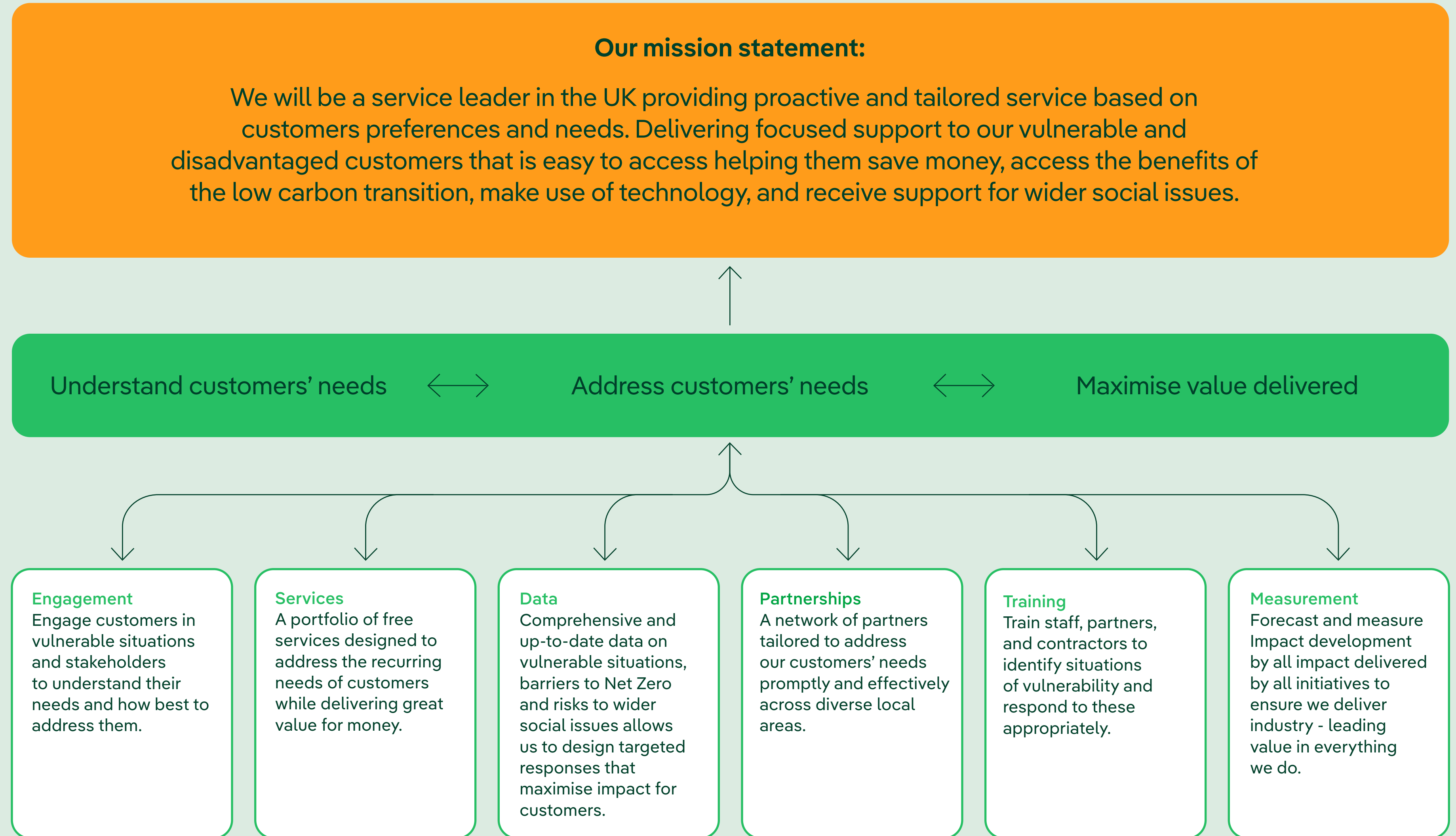




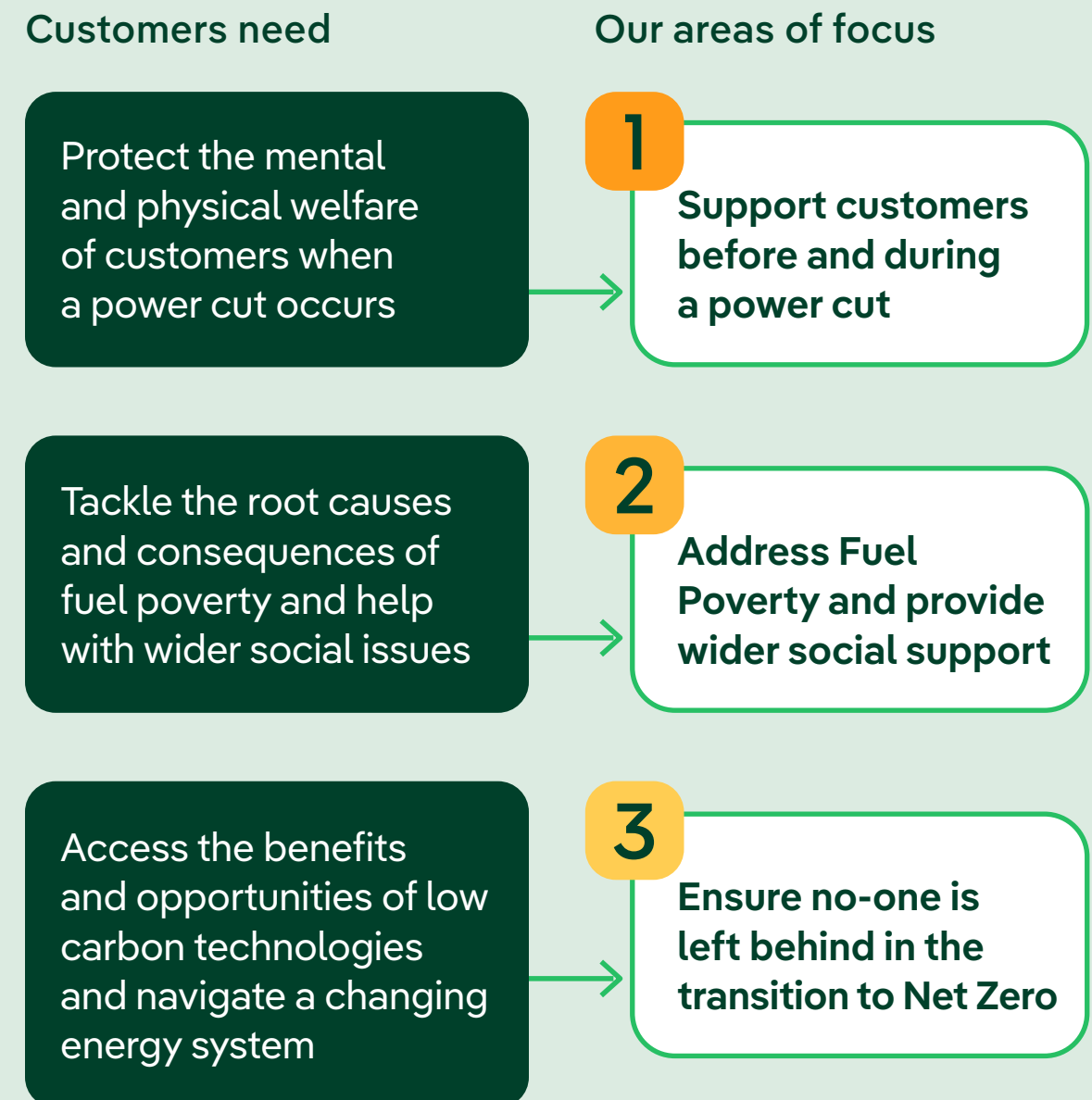
# Our consumer vulnerability strategy

Our vulnerability strategy, introduced in 2015 but continually tested and refined in collaboration with customers and stakeholders, has two objectives: safeguarding our communities, and delivering industry-leading value by addressing our customers' core needs.

The strategy is designed to be dynamic and allow us to address both immediate challenges, like the energy crisis, and long-term challenges like the transition to Net Zero.



## Addressing customers' needs



As a provider of an essential service, electricity, we have a well-defined role in addressing our customer's needs. This role, defined in collaboration with customers, stakeholders and shaped by our regulator, focuses on three situations: power cuts, fuel poverty and the risk of being left behind. In our bid to deliver industry-leading value our vulnerability programme is shaped around our customer's needs during these situations. Our every action is informed by a sophisticated use of data, an established network of partners and the expert guidance of our stakeholders. While we are focused on our core role, we have vowed to never pass on an opportunity to make a difference for a customer. This is where our Coalition of Partners initiative comes into play, offering an established playbook and a wide range of partners that offer support that stretches far beyond the realms of energy to support customers at 360-degrees.

### 1 Support customers before and during a power cut

**Stakeholders said:**

As a DNO, one of our core responsibilities to customers is to ensure they do not go off supply. In the unfortunate situation of this happening, it is imperative that we restore power as soon as possible and provide the necessary support infrastructure ahead of time. Stakeholders have made it clear that tackling the challenges that customers face due to a loss of power should be the core focus of our vulnerability programmes.

During a power cut, people affected by situations of vulnerability will often experience greater detriment. Our stakeholders believe we should prioritise both (i) minimising the detriment caused by power cuts, and (ii) provide a quick and appropriate support to those more at risk during and after a power cut.

**Customers said:**

Our customers, particularly those in vulnerable circumstances, made it clear that proactive communication before, during and after power cuts was critical for minimising stress levels and enabling plans to be put in place. Information such as when power will be restored, or when SPEN would be on site were cited as particularly useful to help make necessary arrangements around the disruption caused.

Customers in situations of vulnerability also highlighted that they expected more support during power cuts, especially customers who use electric powered medical equipment. They also believe that SPEN should focus on promoting the additional support mechanisms it has in place to safeguard and protect customers in particular vulnerable circumstances.

**Our actions/Communicate promptly, clearly, and effectively during and before power cuts:**

Our customers, and especially those affected by situations of vulnerability, tell us that power cuts cause stress, anxiety and can pose a real threat to their safety and wellbeing. We can help customers manage these challenges by providing quick, clear, and accurate information before and during power cuts.

When an emergency occurs and detriment to customers cannot be wholly prevented, we seek to understand our customers' needs and offer a range of welfare support services that include generators, the provision of hot food and a set of tailored support services.

Looking to the future, our state-of-the-art Customer Relationship Management system, introduced this year, will further enhance our ability to offer customers timely and accurate information, cutting our response times, freeing up our colleagues' time so they can offer proactive and targeted support to those registered on the Priority Services Register during emergencies.



**Number of customers supported in a power cut**

Power cut support	Customers supported
Safety & Security of Supplies leaflet	3,500,000
Winter Preparedness Leaflet	3,500,000
Website Accessibility	603,007
SMS Updates	566,991
Voice to Landline updates	336,228
Proactive & Restoration calls	114,000
Interactive Voice Response (IVR) messaging	79,709
Outage Support (incl. pre outage visits & person on-site)	44,074
Dedicated PSR Helpline	15,017
Transient vulnerability	10,041
Additional Security Checks	7,871
Hot Food & Accommodation Provision	5,038
Generator provision	4,378

## 2 Address Fuel Poverty and provide wider social support

### Stakeholders said:

According to National Energy Action, the number of households in fuel poverty will increase from 4.5 million UK households last October to 8.4 million by April 2023. Now more than ever, stakeholders believe that as an energy distribution network, SPEN play a significant role in helping to address fuel poverty.

Stakeholders have told us they believe SPEN can play a critical role in providing energy efficiency advice and guidance on managing increasing energy costs. Where SPEN does not hold this expertise, Stakeholders have told us we should work collaboratively with expert partners to address the needs of our customers experiencing fuel poverty.

Due to the relationships, we hold with customers as an essential service provider, our stakeholders believe that we should provide wider social support through our partnerships with expert providers.

### Customers said:

Increasingly, we are hearing from customers who are struggling financially due to the cost of living and energy crises. Their feedback echoes our stakeholders in that we should play a role in tackling fuel poverty.

Customers are particularly supportive of services that can be delivered without adding more burden on customer bills.

Customers also support SPEN's extensive partnership strategy to deliver support once a customer need is identified, agreeing that we are not always best placed to tackle certain social and financial barriers that customers face.

### Our actions/Tackling the root causes of fuel poverty and its consequences:

Over the past year we acted decisively to address the sharp increase in the incidence of fuel poverty caused by the cost-of-living crisis. In line with our established portfolio of fuel poverty support, our support tackled all 'variables' of the fuel poverty equation, from energy costs to energy consumption and our customers' ability to pay.

We expanded our successful partnerships and programmes of support, both in volume and in reach, reaching more customers in more areas. Overall, we delivered a diverse range of fuel poverty support.

Our experience in supporting customers in situations of fuel poverty tell us that this phenomenon is also linked with other issues that must be addressed, along with the root causes of fuel poverty, to make a lasting impact on customers. These include social issues like social isolation or safety issues like Carbon Monoxide (CO) poisoning which we have addressed in partnership with our Global Development Network partners, who have a wealth of experience in increasing awareness and delivering initiatives to minimise CO risks.

Fuel Poverty & Wider Social Support	Customers supported
Income maximisation and debt advice	4,367
Energy efficiency measures and best tariff advice	1,132
Home Safety	483
Carbon monoxide awareness and alarms issues	388
Befriending, carers support, dementia support, good food and friends	104
Connections assistance	51

## 3 Ensure that no customer is left behind in the transition to Net Zero

### Stakeholders said:

As the energy system transitions our stakeholders believe we should support all customers in participating, especially those in situations of vulnerability who may face additional barriers.

Stakeholders have told us we should focus on creating opportunities for customers to adopt low carbon technologies while enhancing their knowledge and technical skills through the transition Net Zero.

Stakeholders also highlighted that we should work alongside partners to deliver tailored messaging and support to help build understanding around the energy system transition and the opportunities to participate.

### Customers said:

Customers made it clear that they felt uninformed about the energy system transition and that SPEN should support all groups in participating on the journey to Net Zero, not just those in vulnerable circumstances.

Cost and a lack of understanding of low carbon technologies were seen as the major blockers being able to participate in the transition. Customers told us they would like to see clear and simple information on how to adopt low carbon technologies as part of a central resource.

### Maximise value delivered

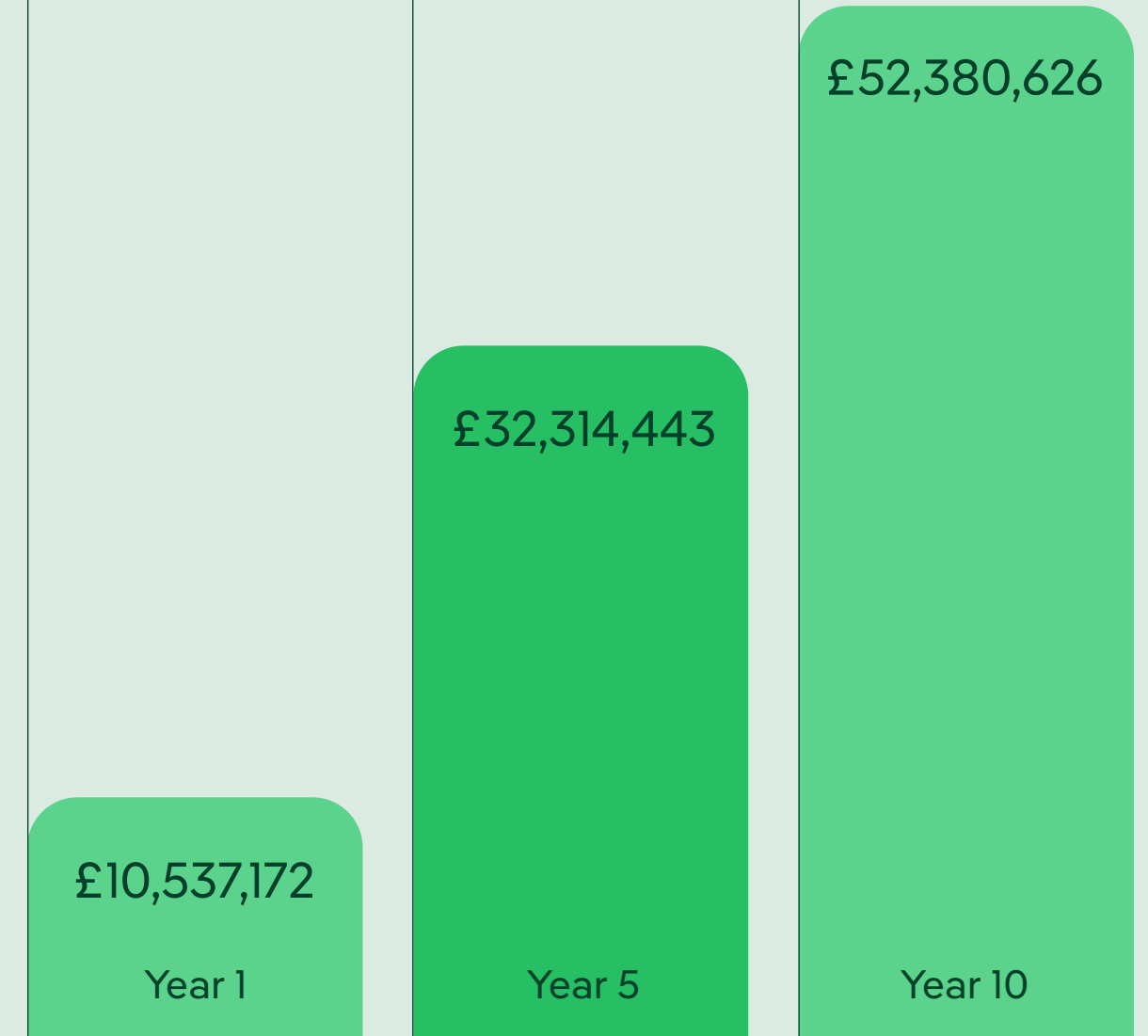
The success of our vulnerability programme is defined by the impact we have delivered for customers. As pioneers in social value measurement among DNOs, we constantly forecast and measure the impact of our actions on customers and communities, shaping our partnerships and services to ensure we delivered the most impact in efficient and effective ways. The section below presents a breakdown of the value generated for customers based on 44 services and initiatives delivered this year, along with a forecast of future benefits stemming from the support provided.

### Our consumer vulnerability programme delivers great value for money

For every **£1 spent**, we delivered **a total benefit of £1.44** to our customers

For every **£1 spent** we, delivered **a total benefit of £6.21** to our customers

For every **£1 spent**, we delivered **a total benefit of £10.69** to our customers



## Breakdown by area of focus

SPEN led the collaboration of DNOs to deliver the future ED2 Vulnerability Framework as well as the SROI common framework and rule book. The graphic below shows the customers supported and value delivered across each of our 3 areas of focus.

**1,230,268**  
Households Registered on our PSR



	Fuel Poverty	Leaving no-one behind	Power Cut Support
Customers supported	11,354	720	5,801,303
Customers financial benefits	£3,447,047	£2,588,857	£95,843
SROI	£17.27	£0.94	£0.35
SROI term modelled	12 months	12 months	12 months

Please note: The SROI ratio represents all net benefits received by customers for every pound spent on delivering the relevant initiatives. It follows that an SROI of £0.35 indicates that 35p of value are created for customers over and above the cost of delivering the relevant initiatives.

## Ramping up our vulnerability programme to deliver enhanced support to our customers during ED2

Our ED2 Targets	How we have prepared to meet our targets
Register <b>90%</b> of households on our PSR and <b>80%</b> across every needs code	<p>The Coalition of Partners model greatly enhances our ability to identify eligible customers via a co-ordinated network of expert partners.</p> <p>Introduced new partnerships aimed at identifying and recruiting customers in hard to read groups to the PSR.</p>
Deliver direct support services to <b>61,485</b> customers affected by fuel poverty	<p>Expanded the scope and reach of key partnerships including Agility ECO, National Energy Action, the Fuel Bank Foundation and cross-sector collaboration with our GDN partners.</p> <p>Introduced the Coalition of Partners model, an industry-first co-ordination platform among charities, utilities and essential service provider that will greatly enhance our capacity to deliver more comprehensive support to customers.</p>
Deliver direct support services to <b>40,000</b> customers at risk of being left behind	<p>Develop an industry-first approach to measuring the risk of being left behind.</p> <p>Expanded innovative trials exploring solutions to removing barriers that may prevent customers from reaping the benefits of the energy system transition, including the use of electric storage heating to shift load via smart controls.</p> <p>Rolled out educational guides that inform customers on the opportunities of the system transition and direct them towards expert partners that can scope, advise on and deliver tailored solution for those at risk of being left behind.</p>

## Connecting to our network

We go the extra mile for our customers – far beyond the typical energy business remit – engaging through social media, innovating, and preparing for the future.

During the final year of RIIO-ED1 we produced 11,581 quotations in SPD and 12,189 quotation in SPM for our customers. Compared to previous year the volume of quotations issued to customers has increased by 3% which is largely attributed to the increasing prevalence of low voltage generation connections onto our network. We started the RIIO-ED1 price control period with large scale generation and commercial developments as the most prevalent type of customer projects we managed. By the end of the price control it was low voltage solar developers working on homes and businesses along with EV Charge Point operators for Motorway Service Areas.

For our minor connections customers, our average time to quote in SPD was 5.33 working days for single premises, and 14.50 days for multiple premises. The corresponding average time to connect was 32.07 days and 34.07 days, from accepted and payment. In SPM, our average time to quote was 5.81 working days for single premises, and 14.80 days for multiple premises. The corresponding average time to connect was 33.27 days and 38.01 days, from acceptance and payment.



## Innovation and future networks

Innovation stands as one of the three primary metrics within the RIIO model, along with Incentive and Outputs.

It has become ingrained in our corporate culture and is crucial to our mission of facilitating a smooth transition for our customers as we transform into a Net Zero network business. At SPEN, we approach innovation with a clear objective: **to generate tangible benefits for our customers. We take pride in our achievements.** We have established a mature process, a track record of leadership, and a highly skilled workforce that enables us to deliver on our commitment to energy innovation. Anticipatively, we project that our innovations during RIIO-ED1 will yield benefits exceeding £200 million throughout the RIIO-ED2 period.

### Commitment to Innovation ●

Our award-winning innovation activities are core to our business. We recently won at the IET Innovation awards for our LV Support Room that received NIA funding through our Network Constraint Early Warning System (NCEWS Phase 2) project.

Collaboration is core to the success of innovation. We have worked with over 190 suppliers and 20 academic partners on innovation projects. We also actively support projects that address industry challenges. Sharing knowledge and learnings is critical for enabling innovation. Across our NIA portfolio of 19 active projects, 7 are collaborative.

### Two recent Network Innovation projects which are in the process of transitioning to business use

**Our Real Time Fault Level Monitoring project** remarkably developed a proof of concept that demonstrated real-time fault level detection and is now undergoing evaluation for business rollout.



**SINE Post project** has transitioned to BaU. The project successfully demonstrated a solution to locate 11kV faults more effectively and provides customer benefits via greater efficiency in our operations and improved network performance.



## LV Engine (£8.2m)

LV Engine aims to trial innovative Smart Transformers (STs) within secondary substations as the central point of an active and intelligent 11kV and LV distribution network. The ST trialled during the project will bring together power electronic hardware with intelligent network monitoring and control to maximise the performance and efficiency of the distribution network.

The innovation will;  
Pave the way for a low carbon future for customers.  
Represent a saving of £62m by 2023 and £528m by 2050 based on successful roll-out in Great Britain.

Over the last 12 months, we have tested the ST performance and our LVDC protection strategy within a controlled laboratory environment at Power Network Demonstration Centre (PNDC). The team are now currently planning for installation of the ST in a real distribution network at Falkirk stadium. The next steps will involve further installations in Wrexham trial sites and monitoring the performance of LV Engine solution in live network.



## Angle DC (£15m)

Angle-DC is an innovative project which aims to demonstrate a smart and flexible method for reinforcing distribution networks by converting Alternating Current (AC) assets for Direct Current (DC) operation. This ground-breaking project has sought to improve network capacity and performance, using power flow control, by converting an AC interconnector to DC, forming a Medium Voltage Direct Current (MVDC) link, so that an increased thermal capacity and better controllability can be achieved by the existing assets.

The project focused on reducing consumer cost of losses and network reinforcement through:  
**Losses optimisation** – providing control room operators with calculated seasonal and real time setpoints, to reduce network losses to a minimum, even as the spread of load and generation changes across the network.

**Capacity increase** – by optimising power flows, existing circuits can be used to facilitate the integration of renewable resources, releasing capacity for new connections across Anglesey and North Wales distribution network.

**Deferred wayleaves** – by increasing interconnector capacity and increasing new AC network connections capacity, the need for a significant number of new wayleaves have been avoided. The need for new wayleaves will continue to be reduced throughout RIIO-ED2 and beyond.



## Charge (£8.4m)

The Charge project was successfully completed within the previous reporting year. The project has delivered new and innovative ways for the UK to create a public charging infrastructure that supports all EV drivers, both now and in the future. Key results from the project include:

**Created detailed forecasts of EV driving patterns** and charge point demand over the next 25 years.

**Developed smart connection solutions that can maximise the use of existing network capacity** and rapidly boost the number of public charge points.

**Empowered customers with a timesaving, self-service tool that takes the complexity out of charge point** location and enables them to generate their own quotes.



## Fusion (£5.9m)

Our Fusion project is a Distribution System Operator (DSO) transition project aimed to demonstrate the commoditisation of the demand side flexibility through a structured and competitive market-based framework, enabling the DNO and other market actors to unlock the value of local network flexibility.

The project adheres to the Universal Smart Energy Framework (USEF) principles and is focused to;

Inform how a standardised approach helps DNOs to harness local flexibility to efficiently manage the modern network.

Promote and effectively manage the load growth from increasing LCT uptakes and strategic regional developments.

Defer the conventional reinforcement of the distribution network.

Over the last 12 months Fusion has successfully concluded a live trial and completed the analysis phase. The project team are in the process of writing up the closedown report, with the project due to be completed later in 2023.



# Environment

We have a key role in enabling greater adoption of low carbon technologies (LCTs), such as Electric Vehicles and micro-generation. We are also focusing on reducing the environmental impacts of our operations.

In this report we provide an overview of our environmental performance against our RIIO-ED1 Commitments and give examples of the initiatives delivering progress as part of our longer-term strategic plan.

## Our own carbon footprint

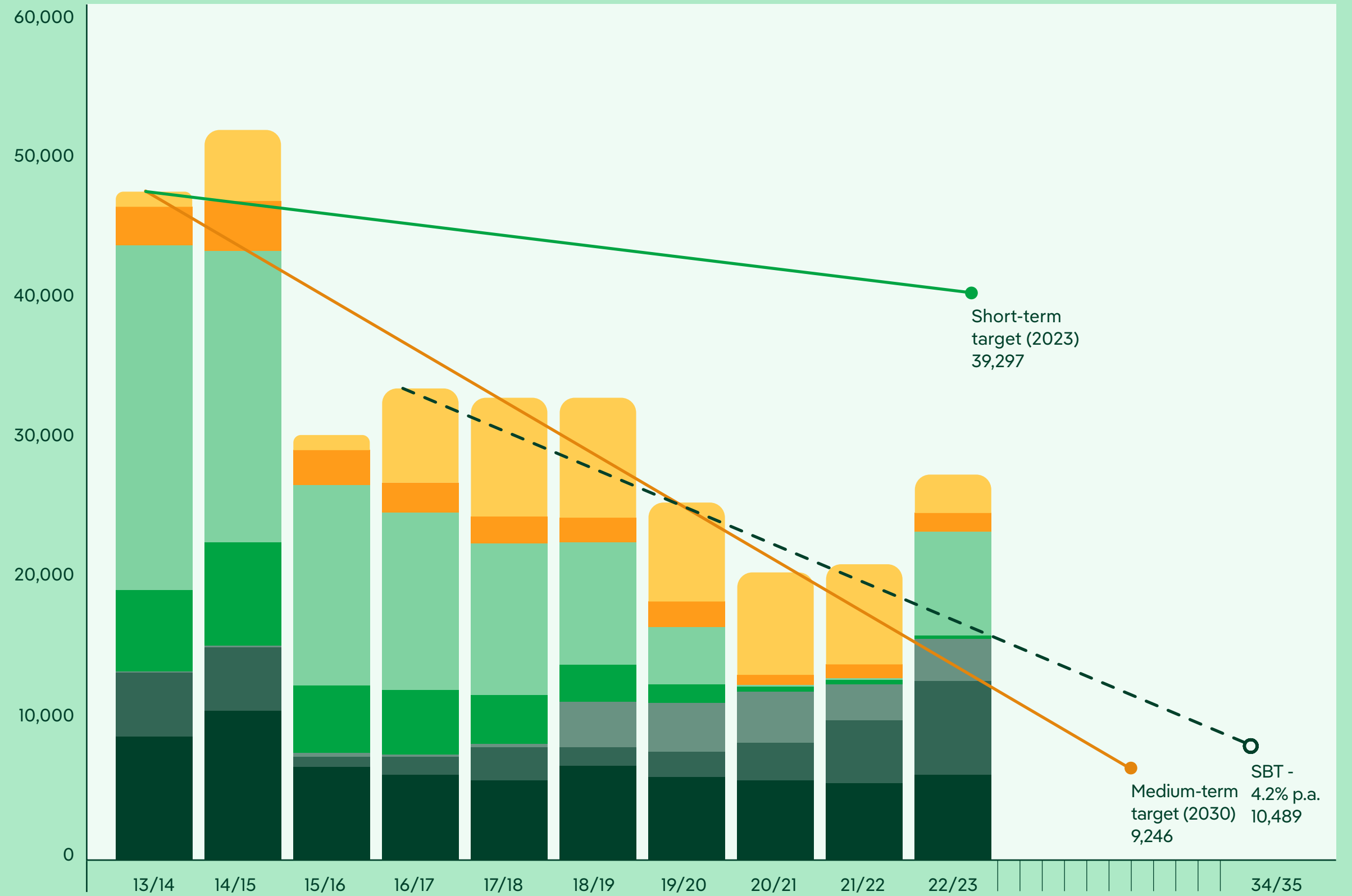
Since the start of ED1, we have achieved a 42% reduction in our combined (SPD & SPM) carbon footprint, excluding losses.

In comparison to 2021/22, our carbon footprint (excl. losses) has increased by 41% in SPM and by 30% in SPD. The main reason for this increase is due to the lack of availability of REGO tariffs for our unmetered substations between April and October 2022. This resulted in an increase of around 7k tCO<sub>2</sub>e compared to the previous year for Buildings Energy Use.

Since 2021/22, our operational vehicle carbon has increased by 10% in SPM and by 11% in SPD. Emissions related to business travel have also increased by 21% across Distribution. These increases are mainly due to the easing of Covid-19 restrictions, however they are still 24% lower than pre-Covid-19 levels. Whilst SF<sub>6</sub> (Sulphur hexafluoride) tops ups have decreased since last year, reflecting reduced leakage, our overall emissions have increased by 51% in SPM and 78% in SPD due to the inclusion of emissions from disposed assets.

We continue to make improvements to our reporting processes for disposals, working with our scrap contractors to improve the quality of data provided for SF<sub>6</sub> removed from disposed assets.

Distribution Business Carbon Footprint (excl losses) and Targets





### Reduce oil leaks by 50% through replacement of poorly performing 132kv cable in SPM



At the start of ED1 we set ourselves a target to reduce leakage in our SPM 132kv fluid filled cables. In 2021/22 we achieved an 84% reduction in fluid filled cable top ups in SPM compared to the 2015/16 baseline. However, in 2022/23 there were 4 significant leaks in Merseyside resulting in 13,421 litres of oil leaked. All repairs were successfully completed, and we have returned to average level.

In SPD we have 31km of fluid filled cables and topped up 25 litres in the 2022/23 reporting year with a leakage rate of 0.03%.

### Increasing the use of electric vehicles and charging points



In September 2019, our parent company Iberdrola signed up to The Climate Group's EV100 initiative. The agreement will see Iberdrola electrify their vehicle fleet (subject to local market conditions) by 2030. Since then, SP Energy Networks has been at the forefront of this initiative, focusing our efforts on ensuring we have optimal vehicle charging facilities whilst procuring the most effective electric vehicles to become an essential part of our operational activities.

**Distribution Environment & Innovation Report:**  
[www.spenergynetworks.co.uk/Distribution-Environment-&Innovation-Report](http://www.spenergynetworks.co.uk/Distribution-Environment-&Innovation-Report)

**Network Losses Report:**  
[www.spenergynetworks.co.uk/Network-Losses-Report](http://www.spenergynetworks.co.uk/Network-Losses-Report)

### Visual amenity in Areas of Outstanding Natural Beauty (AONB), National Scenic Areas (NSA) and National Parks



We continue to target measures to reduce the visual impact of our network by removing overhead lines from Areas of Outstanding Natural Beauty (AONB). This year we removed a further 2km of overhead line and installed 4km of underground cable in AONB. The two pictures below show before and after 0.35km of overhead lines were removed in Aberffraw, situated in the Ynys Mon/Anglesey AONB. We fell short of our target of undergrounding 85km by the end of ED1 as many projects were delayed due to the Covid-19 pandemic. However, we have a full programme of works heading into ED2.

Before



After



### Utilise Smart Meter technology to ensure all generation sources are supported quickly



Installations under the UK's Smart Metering Implementation Programme continued at pace during the 2022/23 regulatory year, showing sustained recovery after the Covid-19 pandemic impacts seen in previous years. By 31st March 2023 there were approximately 391k SMETS2 devices in our SP Distribution licence area, with approximately 390k in SP Manweb area.

In addition to the SMETS2 devices, more of the SMETS1 devices were enrolled into the UK's Smart DCC infrastructure, allowing us to connect and retrieve data from these older devices. By the end of the year, we were able to communicate with 434k SMETS1s in the SP Distribution area, and another 306k in SP Manweb. Both the SMETS2 installation and SMETS1 enrolment programmes are coordinated by the Supplier/Retail organisations in the UK.

Continued installation and enrolment throughout 2022/23 means that we were able to retrieve data from 1.5 million smart meters by the end of the year, around 43% of our customer base.

# Expenditure and Revenues

Financial performance

Pg27

Bill Impact

Pg28

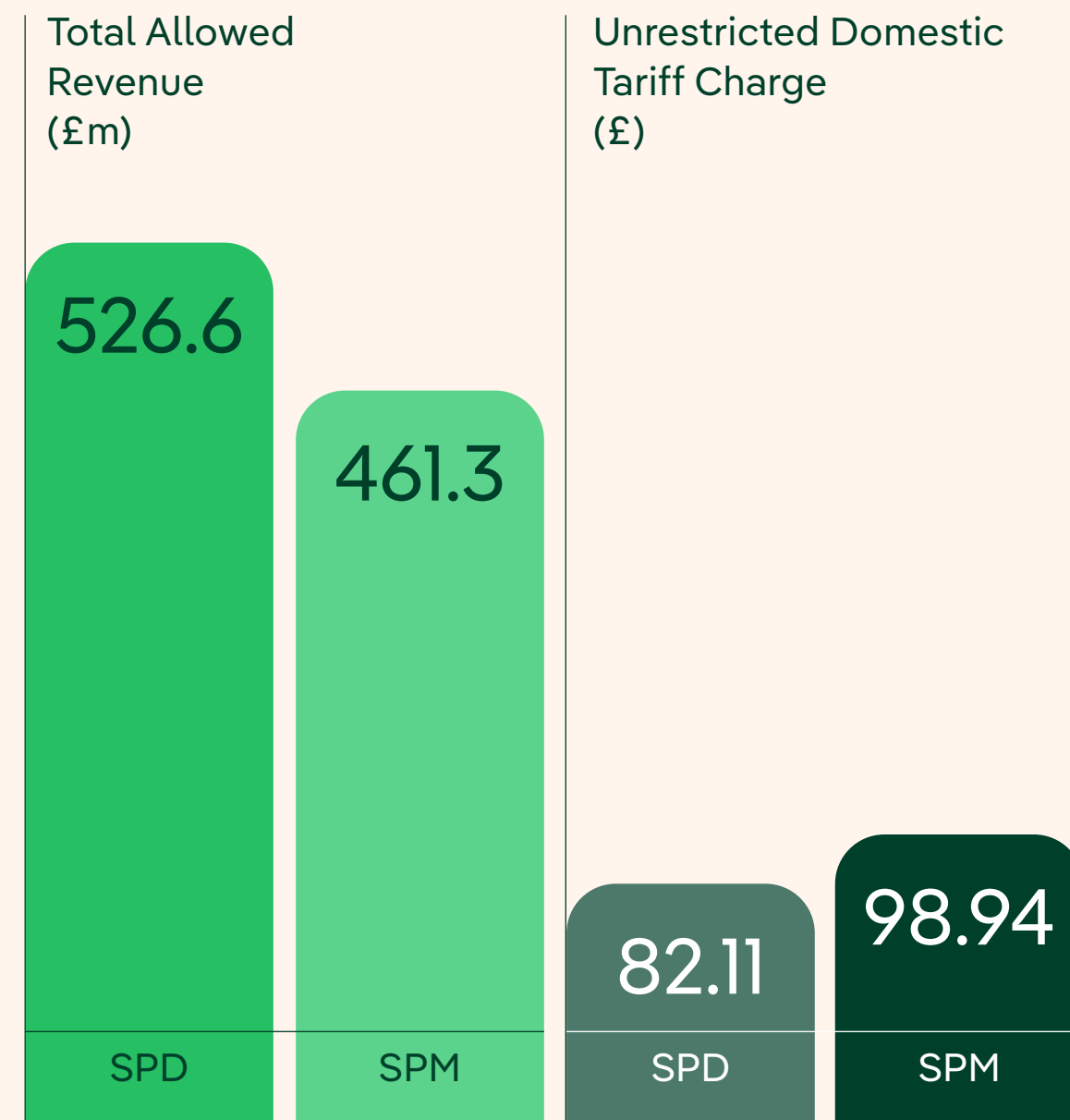


# Financial performance

‘RIIO’ is Ofgem’s framework for setting price controls for network companies. RIIO stands for Revenue = Incentives + Innovation + Outputs. Effectively, this means that we are only rewarded for delivering exceptional performance in our incentive, outputs, and innovation.

### Our allowed revenues

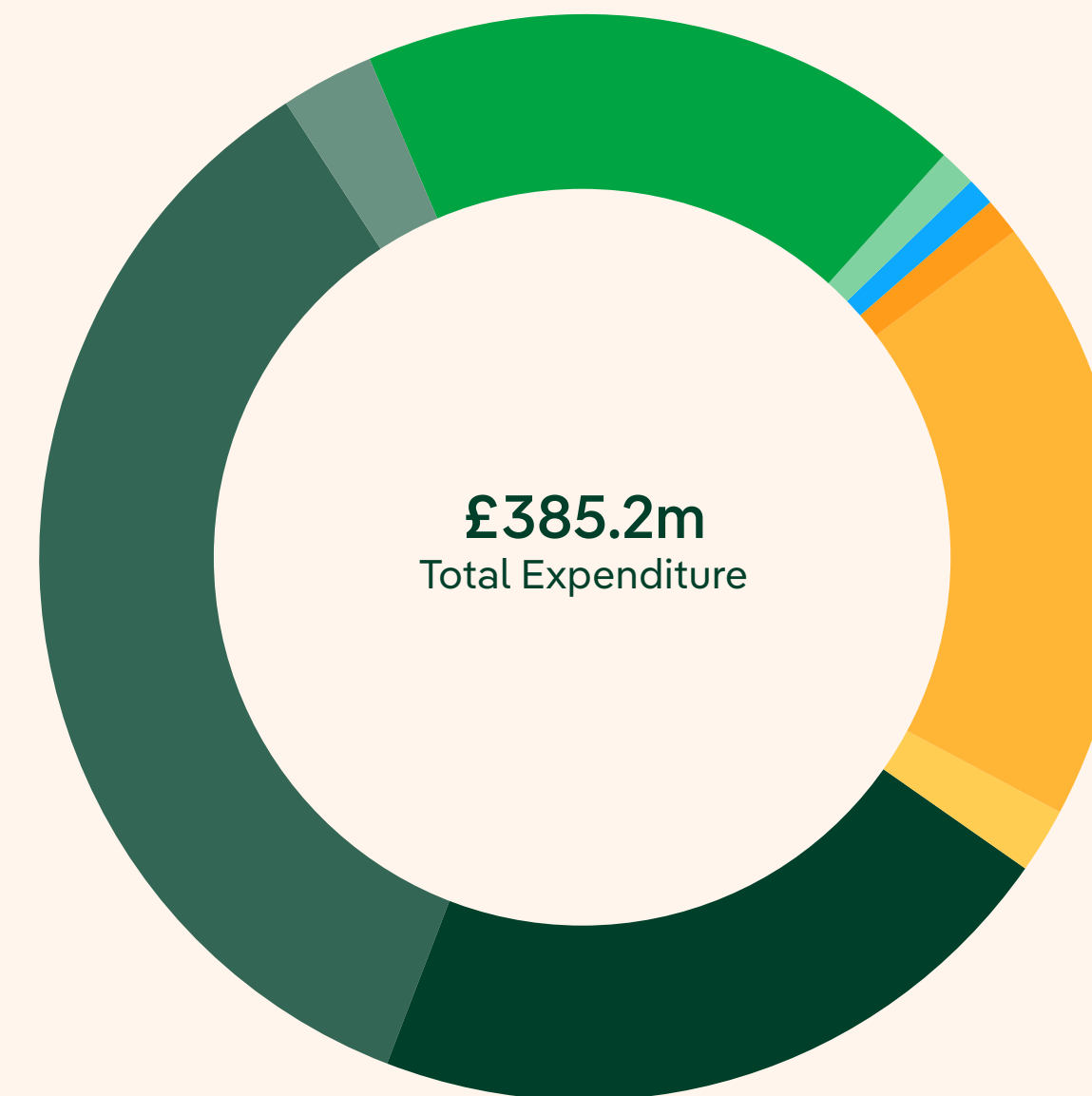
The amounts we are permitted to recover from our customers for using our network services during 2022/23. In total, and what it implies for Our Unrestricted Domestic Tariff Charge:



## SPD & SPM expenditure

	SPD (£m)	SPM (£m)
Engineering and support Activities	64.3	69.1
Asset Replacement and Refurbishment	29.4	40.9
Network operating costs	37.6	42.1
Rising lateral mains	1.3	2.2
ESQCR low ground clearances	1.0	4.9
General reinforcement	30.9	37.1
Non-operational capex	4.1	4.6
Connections	2.2	1.5
Others	8.5	3.5
<b>Total</b>	<b>179.3</b>	<b>205.9</b>
<b>Total combined 12/13 Prices</b>	<b>£385.2m</b>	

## SPEN Expenditure



Asset data and refurbishment	18%
Rising Lateral Mains	1%
ESQCR (Low ground clearance)	1%
Connections	1%
General Reinforcement	18%
Non Operational Capex	2%
Network Operation Costs	21%
Engineering & Corporate Support	35%
Other	3%

## Performance-related financial incentives

How our performance this year translates to rewards or penalties under the various financial incentive mechanisms put in place by the regulator, Ofgem, and applied to all DNOs.

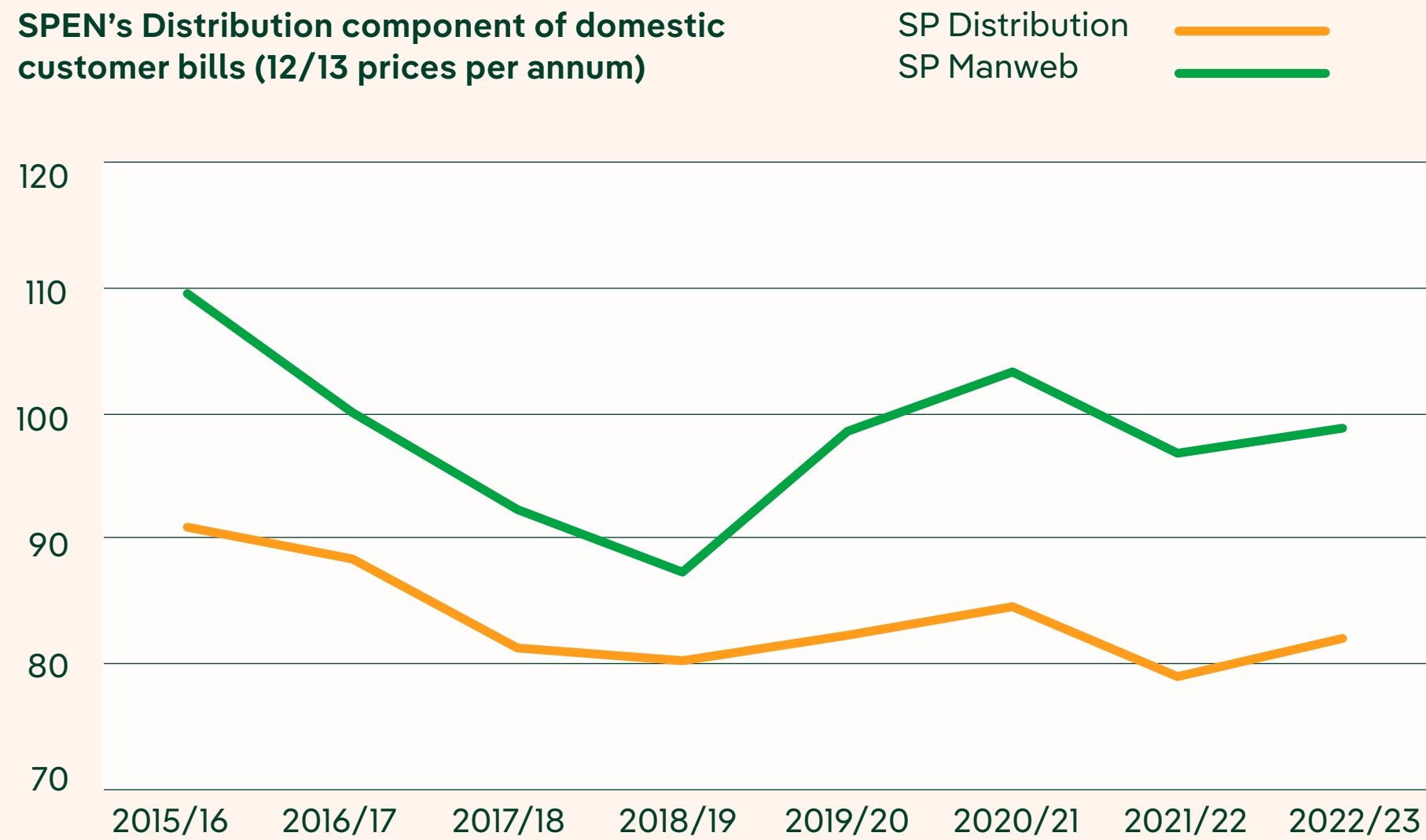
	SPD (£m)	SPM (£m)
<b>Reward or penalty schemes</b>		
Interruptions incentive	9.91	1.96
Customer satisfaction	3.10	3.40
<b>Penalty-only schemes</b>		
Incentive on Connections engagement	0.00	0.00
<b>Reward-only schemes</b>		
Stakeholder engagement incentive	TBC	TBC
<b>Customer vulnerability incentive</b>		
Time-to-connect incentive	0.47	0.36
<b>Total</b>	<b>13.48</b>	<b>5.72</b>
<b>Total licensees combined</b>	<b>19.21</b>	

### Reward

In 2022/23, we earned a £19.2m reward for going above and beyond delivering a safe, secure and reliable service to our customers and meeting our stakeholders’ needs.

# Bill Impact

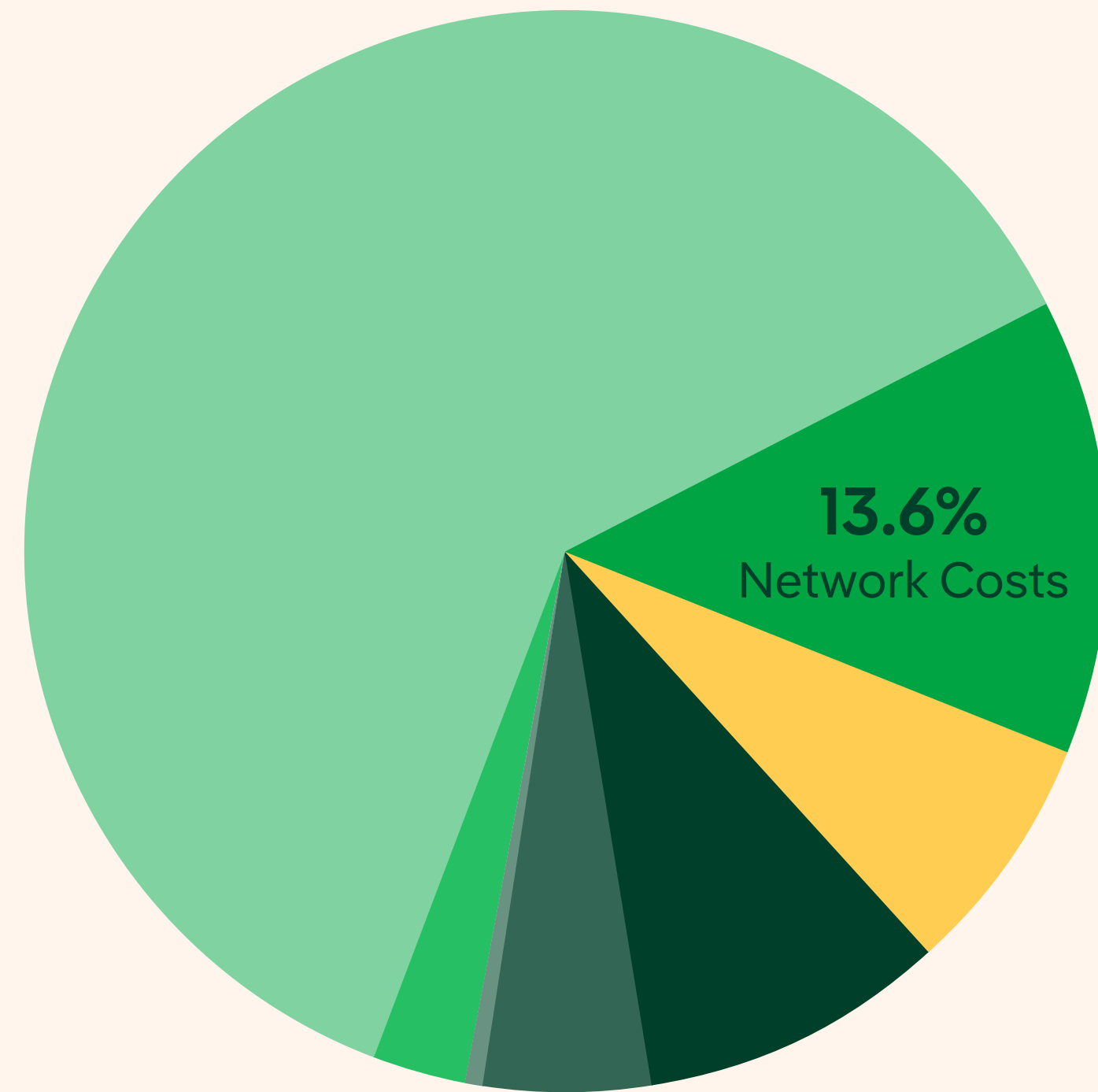
The make-up of distribution network costs which represent your annual domestic electricity bill in 2022/23. SPEN's Distribution component of domestic customer bills has fallen by 9.5% in real terms since the start of the EDI price control.



## 36p per day

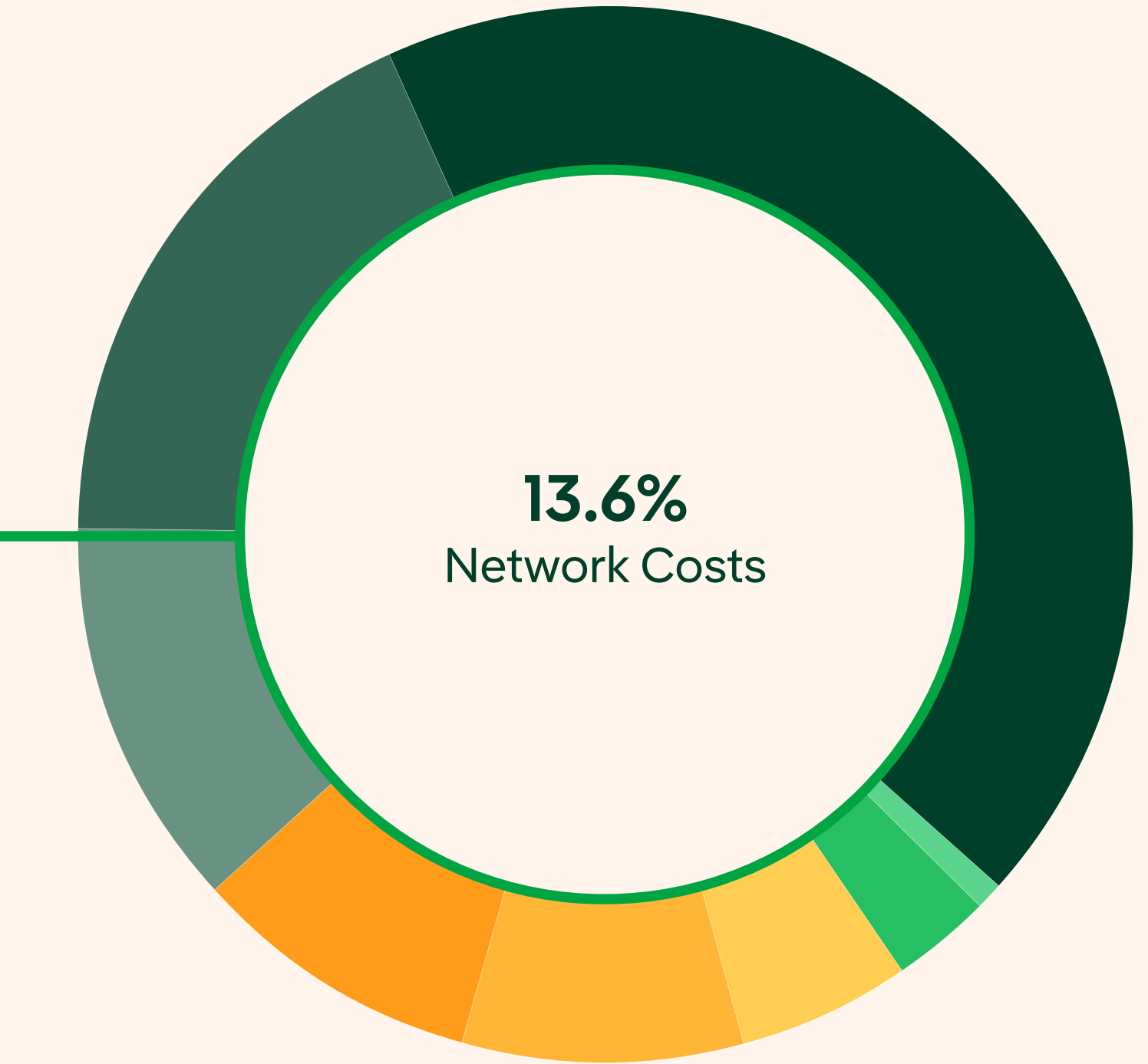
SPEN's Distribution component of domestic customer bills is around 36p per day – less than less than the equivalent daily Netflix subscription. Average customer bills have also fallen by 9.5% in real terms since the start of the current price control.

## Breakdown of an average electricity bill



Wholesale cost	61.9%
Network Costs (Including Transmission Costs)	13.6%
Operational Cost	7.2%
Environmental and social Obligation Cost	9.3%
VAT	4.8%
Supplier pre-tax margin	0.7%
Other Direct Costs	2.6%

## Breakdown of the network costs in an average electricity bill



Future Proofing our Network	42.8%
Financing	17.9%
Cost of Maintaining the Network	11.8%
Business Rates	8.9%
Legacy Pensions	8.3%
Transmission Charges	5.3%
Other	2.9%
Regulatory Incentives	2%

Based on electricity only portion of a dual fuel bill with ave. consumption of 2.9MWh, direct debit payments. Average of Ofgem price cap bill values for the period of April 2022 - March 2023. Network charges above include SoLR costs (c2.4%) for failed energy suppliers which are not related to the service networks provide, however Ofgem's methodology means these costs are collected via our charges.

# Looking forward

Distribution System Operator (DSO)	Pg30
The Importance of Data and Information	Pg35
Smart Meters	Pg36
Our People	Pg38



# Our transition to Distribution System Operator (DSO)

To tackle the climate emergency and deliver Net Zero carbon targets, we need to change the way that we use and develop our distribution network. We do this through developing our capabilities as a Distribution System Operator (DSO).

As a DSO, we will embrace and drive a whole system approach to planning our network, through open and transparent stakeholder engagement. We will explore opportunities to use flexible alternatives to traditional reinforcement across our network, and will work closely with our stakeholders to develop and share data and information which meets their needs.

It is important that the role of the DSO evolves not just within SPEN, but across the wider industry. To ensure that the industry is aligned in the roles and activities which we need to develop, Ofgem and the wider industry have agreed three core roles. These roles prescribe, at the highest level, what the expectations are of all parties. However, how we achieve this, and what level of ambition we realise, is up to us, and we set out our ambition in our RII0-ED2 business plan to deliver a comprehensive set of DSO outputs in RII0-ED2 and to meet and exceed Ofgem's expectations.

## The Drivers for Change

Within a relatively short period of time, we forecast that a significant proportion of transport and heating will be electrified. We also anticipate a further leap in distributed generation connected to our networks, with the UK Government targeting carbon-free power generation by 2035. Coupled with the rapid rise of digitalisation, we will see a revolution in how domestic and commercial customers interact with their electricity distribution system.

These changes will lead to more dynamic and volatile power flows, more complexity in network operation, and a greater need for whole system coordination. Our customers increasingly have the desire and the tools to participate in the energy system, meaning there is an ever-increasing market of service providers we can work with to solve network challenges and keep network costs efficient. This is a step-change from the design and usage of our network, which were built for an era of passive, predictable consumer demand. These challenges present opportunities for innovation, use of new flexible solutions, and an overall realisation of higher distribution network utilisation.

SPEN is the only network operator to serve communities across all three governments: UK, Scottish, and Welsh. Each have bold ambitions to deliver their own sustainability and Net Zero targets. In our unique position to support these objectives, we recognise that each region has distinct opportunities and challenges. We will enable the communities we serve to meet their targets through our industry leading planning tools, processes, and policies to embrace flexibility solutions, enable flexibility markets, and encourage greater flexibility market participation to unlock the network capacity to meet these needs.

## Our interpretation of the three roles of a DSO

### Planning and network development

#### Role 1

High quality, data-driven intervention decisions that fairly compare all viable options (including flexibility and energy efficiency) and consider Whole System outcomes

Planning processes and intervention decisions which are clear and transparent – stakeholders can follow the progress and decisions for all EHV and 132V constraints.

Network planning data made publicly available.

### Network operation

#### Role 2

Getting more out of existing network capacity by operating closer to limits, managing technical losses, and making more use of operational interventions like flexibility services instead of reinforcements.

Whole System operational coordination to ensure system efficiency, stability and resilience.

Empowering customers and flexibility providers through more data, greater transparency, and more efficient markets.

### Market development

#### Role 3

Supporting flexibility market growth through data share, reduced barriers to participation, and enabling multiple market participation.

More efficient flexibility market functioning through data-driven near-time and real time notifications, operational coordination with the ESO, and a clear governing framework.

Giving users confidence that we are a neutral market facilitator through transparency, external assurance, and a discrete DSO directorate.

## Realising our transition to DSO - A Whole System Approach

We have developed a comprehensive approach which will realise our transition to Distribution System Operator. At the core of our strategy is a Whole System approach. Changes in systems and infrastructure are not enough to achieve the evolution required. We are also changing our ways of thinking, working together with the processes and reporting that support that across our whole business. We are working with our Stakeholders and customers to understand how we can best support whole system thinking and the transition of the energy landscape.

### Stakeholder Engagement & Strategic Optimisation

We are proactive in supporting our Stakeholders, including Local Government, to provide technical support and to assist them in making informed, data-based decisions. With Low Carbon policy changes and technology evolving at pace, our engagement with stakeholders is essential as we seek to bring together information about our network with their expectations and needs. We have recently appointed our first Strategic Optimisers, a new team who will work closely with National and Local Government in supporting the transition to Net Zero. The team have been engaging with various Low Carbon Technologies projects and are providing support with EV and Heat pump forecast planning. In SPD, we provided technical expertise in the development of the Scottish Government mandated Local Heat and Energy Efficiency plans (LHEEs). In SPM, we have been helping Welsh and National government in developing their Local Area Energy Plans.

**Over the coming months, we will be delivering an EV Optioneering report for each of our Local Authorities, which will provide site-specific information for potential EV sites, providing recommendations and advice to improving efficiency and reduce unnecessary costs.**

## Role 1 Planning and network development

Our customers have told us they prioritise four things in their electricity supply: reliability, safety, cost-efficiency, and the freedom to consume when they want. Domestic customers are very clear that they do not want to be compulsorily constrained. The challenge for us is how we continue to deliver these customer priorities against a changing energy landscape. As society decarbonises, a substantial proportion of customer transport and building heating will be electrified, significantly increasing demand.

We are also going to see a further leap in renewable generation to power these, more customers actively participating in the energy system, and the electricity system operator (ESO) increasingly needing to utilise distribution-connected service providers. Without intervention, these new demand, generation, and behaviours will push distribution network power flows well beyond existing network capacity.

Creating the capacity our customers need is key to serving our customers' priorities, accommodating these system changes, and enabling Net Zero. Failure to do so would create barriers to decarbonisation and would mean customers would be exposed to supply interruptions, connection delays, higher overall costs, and possible safety issues.

Our vision is to maintain a safe, secure, and reliable network by efficiently delivering the capacity our customers need to decarbonise, in the timescales they need it – so that they can use LCTs immediately and at full capacity.

### An overview of how we plan our network

Planning and network development is the function responsible for establishing where, when, and how much capacity is needed by our customers, and what interventions should be used to provide it.

We have developed a range of industry-leading tools to support our planning process. These include our EV-Up and Heat-Up forecasting tools, which predict EV and heat pump uptake for every single customer we serve, and our ENZ Platform. This is an analytical platform containing a full connectivity model of our network (including all 42,210km of LV). This uses outputs from EV-Up, Heat-Up, and our DFES to run a comprehensive programme of power flow analysis for every half hour for every forecast scenario – 175,000 iterations per network asset. This systematically identifies the location, magnitude, and timing of every network constraint for all voltage levels and is used as part of our planning processes.

#### Step 1 – Forecasting

('what are our customers' needs?')

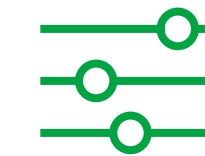
We develop our networks to accommodate our customers' demand and generation requirements. Therefore, the first step of network planning is to understand what these are. We do this using forecasts developed with our stakeholders. The output is forecast locations, volumes (MW), and timescales for customer growth that the network must accommodate captured in our Distribution Future Energy Forecasts (DFES) which we refresh and publish annually.



#### Step 2 – Network impact assessments

('so what additional network capacity is needed?')

We undertake technical assessments to understand where, when, and how much additional network capacity is needed to accommodate forecasted customer requirements and to maintain compliance with technical standards. These assessments are highly detailed, involving analysis of whole network models for multiple outage scenarios to 2050.



#### Step 3 – Optioneering assessment

('so what's the best way to provide that capacity?')

To provide capacity in the optimal way, we fairly and impartially assess different types and combinations of interventions (flexibility, smart, innovation, and reinforcement), and how they could be coordinated with other interventions to reduce customer cost and disruption. This includes tendering for flexibility to understand cost and availability. The output is the identification of the intervention required for every capacity requirement in Step 2.



#### Step 4 – Network investment plan

('so what are we delivering and how?')

The above process is followed to develop plans and to address capacity needs that emerge in period (such as resulting from new customer connections). In the case of the former, all individual interventions identified by the previous steps are collated into a price control submission, and different delivery models (reactive, proactive) are considered.



## The interventions we plan to deliver

The output of our planning process is the identification of the intervention required for every capacity requirement. The process enables us to develop plans and to address capacity needs. Based on our recent iterations of our network planning process, we have identified that we will need to deliver an additional 1,180MW of capacity over the next five years.

### The three main areas of reinforcement which we have determined are as follows;

- We are intervening on 43,384 LV looped service cables and their cut-out units. These are the network assets which connect 600,000 of our customers to the network. Electrification of heat and transport means a typical household's peak demand will triple, exceeding the rating of these assets.
- The LV network, including 42,210km of LV network cable. This is the section of network that runs from local substations to just outside customer's homes. As households are supplied from the LV network, the tripling of household demand that affects LV services and cut out units also impacts the LV network.
- We are intervening on switchgear at 36 substation/groups, using our world-first Active Fault Level Management (AFLM) and Real Time Fault Level Management (RTFLM). These are the network assets which safely isolate the network in the event of a fault. Generators are a source of fault current, and increasing volumes of renewable generation trigger the need for these interventions.



**1,180**  
Additional MW of  
capacity needed over  
the next 5 years

Our planning process and iterative approach doesn't stop there. We continue to explore opportunities to improve resilience, deliver at pace, and improve the efficiency of our approach. Our vision is to maintain a safe, secure, and reliable network by efficiently delivering the capacity our customers need to decarbonise, in the timescales they need it, and some of the means which we will use to deliver the required capacity are as follows;

**Strategic investment:** this brings forward and coordinates investment where it benefits customers. This 'touch the network once' approach is more cost-efficient, less disruptive, and means the capacity is ready when they need it.

**Innovation:** We have built our plans on proven innovation, saving our customers over £87m across our business plan. This includes combining flexibility services with network automation, using enhanced forecasting tools, and world-first real-time and active fault level management.

**Flexibility:** We test the market for every network capacity shortfall identified. Flexibility in our baseline scenario defers £36m of network reinforcements, increasing to £145m in our high scenario. Where flexibility services are not available and we must use network reinforcement, we re-tender for flexibility before the reinforcement works commence to ensure we have the most efficient intervention.

## Whole System

“Our mission is to unlock the full value of Whole System thinking, by collaborating not only with other electricity companies, but also key stakeholders including gas and water networks, innovators, network users, non-regulated companies, local areas, and communities to ensure efficient investment in the electricity network and to achieve a just transition to Net Zero for customers”

To help us communicate the meaning and purpose of our Whole System, we have produced our mission statement above.

Our mission statement reflects feedback from stakeholders, and we believe it is important to drive behaviours, actions and priorities that are in line with our wider ambition to support the decarbonisation agenda. To achieve this, we have developed six guiding principles, shown opposite, that underpin our mission.

We have already made progress, building on existing relationships, and are setting the foundations for the cultural change required to realise Whole System thinking across our organisation.

### Principle 1

Establish strategic partnerships to achieve common Whole System goals.

### Principle 2

Use innovation, markets and flexibility to push the boundaries of Whole System thinking.

### Principle 3

Think beyond the electricity sector to support other energy vectors including heat, transport, and hydrogen.

### Principle 4

Use Whole System thinking to support our communities and vulnerable customers in the transition to Net Zero.

### Principle 5

Improve our mastery of data, share data easily to unlock Whole System and consumer benefits.

### Principle 6

Embed Whole System thinking in our organisation, culture, and ways of working to deliver long-term value.



## Role 2

### Network operation

To transition to Distribution System Operator, we must define and develop system operability capabilities to ensure that we can operate the network safely and reliably. This means we must develop enhanced data and information sets about our network, we must implement operational systems which can dispatch flexibility efficiently, and we must demonstrate that we are able to dispatch Distributed Energy Resources (DER) economically and efficiently.

Stakeholder engagement is key in ensuring that the market develops in an interoperable manner, this means that the market is open to participants and that systems are not a blocker to participation. In order to facilitate this development, and to allow potential participants to understand what they can offer and that they are well informed of processes and procedures, we have contracted with Piclo for 2 years to trial the dispatch and settlement modules and to facilitate our tenders to include long and near real time competitions. In addition, we intend to provide our stakeholders with a single platform to manage all flexibility processes from procurement through to settlement.

The Scottish Government aims to achieve 50% of energy demand from renewable energy generation by 2030, requiring the addition of approximately 17GW of new capacity. Currently, the development pipeline has 14GW of renewable electricity generation, with 2.9GW already approved to connect in our licence area. However, some generators have encountered well-documented limitations in installing more renewable capacity and exporting to the transmission network due to the rapid addition of generation assets in recent years. These constrained areas now face disproportionate reinforcement costs.

To address this challenge, we introduced our Active Network Management (ANM) platform, a distributed control system to monitor and allocate power capacity to customers in areas at risk of exceeding network capacity, called Constraint Management Zones (CMZs). By ensuring that the network operates within safe limits, the platform benefits customers as they can connect renewable generation and LCTs ahead of conventional reinforcement solutions. If the network is approaching limits, the ANM controller instructs actions to be taken to mitigate any risks. Further, our Demand Shift trial in Dumfries and Galloway proved that domestic customers would respond to market signals to help manage the network during times of excess renewable generation. We are now scoping phase 2 that is due to start towards the end of 2023.

In the last year SPEN have developed the PRAE platform with SIA Partners, which allows us to visualise a National dashboard for our Licence areas with respect to future generation and underlying demand. This assists with constraint analysis, load forecasting and contingency management. Moving forward this will allow us to proactively procure demand flexibility services when required in areas of congestion and will inform our future reinforcement plans. Improved forecasting will also influence how we manage network security and plan network outages whilst minimising the potential disruption to customers.

### Case Study: Active Network Management

Having successfully completed trials of the ANM platform, we are now able to offer 'ANM connections' from two of our Constraint Management Zones in Dunbar and Newton Stewart. Our trial in Dunbar enabled accelerated renewable energy connections, cost savings, job creation, and wider-community benefits. Analysis showed that the trial led to clear economic and carbon benefits, including enabling total capital investment of an estimated £200m, the creation of 56 long-term jobs, £75,000 of community benefits and an estimated carbon saving of 98,000 tonnes. The work since the Dunbar trial has been on developing and deploying a Centralised ANM Platform that is scalable to the rest of our network. As each CMZ goes live, (DER) customers seeking to connect will be able to apply for a Curtailed Connection, connecting ahead of traditional reinforcement with the condition that their export or import may be restricted at times of high network loading. Customers will also be provided with a Curtailment Limit, receiving a Curtailment Payment if this limit is exceeded in a 12-month period. This will provide connecting customers with greater certainty over the financing of their project(s).

The ANM Platform is now live in SPD, with two DER customers with a total capacity of 75.5MW in Dumfries and Galloway connected. By 2031, we anticipate that the area will receive a reduction of 522,000 tonnes of CO<sub>2</sub>, generating over £40m worth of customer benefits.

We are now undertaking in depth analysis of how to replicate the success in SPM, which has a more complex, interconnected network structure. We will deploy the first of such in SPM later this year and are aiming to have 28 CMZs across our whole network by 2028.

### Case Study: LV network monitoring

Network monitors provide visibility of the network. The data they deliver helps us efficiently and safely plan, develop, and operate the network to meet our customers' needs. For this reason, our network has extensive monitoring at the HV and EHV voltage levels. However, there is very little monitoring on the LV network as there hasn't historically been a need. Without the data that LV network monitors provide, our investment would be less efficient and less timely, leading to higher costs and a poorer service for our customers. LV network monitoring provides the data we need for:

- Getting more out of existing network assets by safely operating closer to limits,
- Supporting the use of lower cost smart interventions,
- Making more informed and coordinated network interventions,
- Facilitating flexibility solutions and increasing the pool of providers,
- Responding to network faults more quickly,
- Improving management of network losses,
- Encouraging innovation by sharing data with third parties.

We need to increase LV monitoring over RIIO-ED2. At the end of RIIO-ED1 less than 8% of our 31,808 HV/LV substations (≥200kVA) have monitoring. During RIIO-ED2 we deploy monitoring at an additional 14,102 of these substations to increase this coverage to 52%, covering 76% of customers. LV network monitors are complementary to the increasing penetration of smart meters, and customers get the greatest benefit when these two data sources are combined.

## Role 3 Market Development

Our market development activities are supporting flexibility market growth through data share, reducing barriers to participation, and enabling multiple market participation. This creates more efficient flexibility market functioning through data-driven near-time and real-time notifications, operational coordination with the ESO, and a clear governing framework. Overall, we are giving users confidence that we are a neutral market facilitator through transparency, external assurance, and a discrete DSO directorate.

### Building our Team

As part of our commitment to building the structures, processes and procedures that will allow flexibility services to succeed, one of the key activities was to develop our flexibility services team that will manage the high volumes of procurement, dispatch and settlement. We identified clear roles that will be accountable for the procurement and performance monitoring of flexibility services. The dedicated flexibility team will be led by the Head of Flexibility, supported by:

- Flexibility Procurement team who will be responsible for the objective, transparent and market-based procurement of flexibility services to meet our business's needs.
- Flexibility Performance team, who are responsible for the over-arching operation of our flexibility services, including forecasting, contract management, budgeting dispatch and settlement.

### Our Tender Activities

Prior to the start of ED2, we began testing the market for flexibility services and are committed to fair and transparent procurement of flexibility services. During 2020 and 2021, we tendered flexibility services for all locations identified as requiring an intervention due to load growth during the RIIO-ED2 period (2023 to 2028). Amounting to a total of 1.5GW at 1,557 locations. To date, we have accepted bids for over 700MW. Responses to our tenders were initially encouraging, until a significant downturn in our Autumn 2021 tender, in which we received bids totalling 0.2MW in response to a requirement of 98.8MW. By way of contrast, for our Spring 2021 tender, we accepted bids for 555MW in response to a requirement of 1,420MW.

It was important for us understand why this was the case. We believed it necessary to pause our scheduled flexibility tenders temporarily for 12 months to understand inconsistent market interest and to ensure our procurement and use of flexibility remains economic and efficient. We notified Ofgem on 31st March 2022 that our next tender for flexibility services would be issued in April 2023. We partnered with economics consultancy, Oxera, to undertake independent research on our behalf to understand any barriers currently faced by flexibility providers.

Although we paused our tenders, we continued to work with the industry to further develop new markets and products, whilst also undertaking several trials. As per our commitment, we began tendering again in April 2023, looking to procure over 278MW for services covering the period November 2023 to March 2025. We have accepted bids for 13.5MW. Our next tender will be issued in October 2023 for services required for April 2024 to October 2025.

In April 2023 we partnered with Oxera to undertake independent research on our behalf to understand any barriers currently faced by flexibility providers. Detailed below are some of the findings plus our response:

#### Develop a range of markets with different time horizons.

From Spring 2023, we have made the decision to publish our long-term requirements however we will tender for shorter term requirements on a rolling basis. This is to provide Flexibility service providers with information on market requirements several years in advance, and to allow them to provide a more robust price in the shorter term.

#### Reduce the length of availability windows where possible

We are developing the forecasting information for Flexibility service providers which will enable them to better understand when we will require them to be available. This should reduce the long availability windows included within a tender, assisting them to manage their participation in other markets.

#### Standardise the approach across DNOs and ESO

We agree that standardisation should be introduced where appropriate and have contributed to the Open Networks project, which is focused on developing and supporting the implementation of standard approaches such as Common Contract, products, etc. In 2023, we now co-chair to support the delivery of initiatives, and we are part of the Flexible Power collaboration which has four DNOs utilising a standard approach.

#### Improve coordination on flexibility products between the ESO and DSOs

We do not require exclusivity and, if providers are not offering services that conflict with the services we require, we encourage providers to stack revenues. However, we recognise this is not clear to Flexibility service providers and that increased forecasting and exchange of information with the ESO is required. These are areas we are actively developing.

#### Providing data and information such as publication of tender results, ceiling prices, and accurate dispatch forecasts/historical data.

We publish procurement data as part of our Condition 31E annual return. In addition, we will update this template after each tender round so that stakeholders can access the data as soon as it becomes available. Our commitment to providing easy access to information and data to allow potential Flexibility Service Providers and other stakeholders to make informed decisions, is further evidenced by our Open Data Portal, which you can read about on page 35.

## The Importance of Data and Information

Data is the single biggest enabler of a decarbonised, decentralised, and digitised energy future. It's the tool that will bridge the gap between where we are now versus where we need to be – to achieve Net Zero by 2050. Data is essential to optimising the value of assets, driving innovation, better understanding risks, and increasing system resilience. As the owner and operator of three licence businesses, data about our assets, our services, and our capabilities, will be key in supporting the transition to Net Zero.

Data and information are fundamental to a successful transition to Distribution System Operator. To help customers and stakeholders assess and participate in market opportunities, to optimise the operation of their sites, and also to spur innovation and competition, they need data and information. The need for data and information crosses over all roles associated with the Distribution System Operator, and is the vital link in realising the benefits associated with operating our Distribution network of the future.

We are committed to sharing data with our Customers and Stakeholders on a presumed open basis. This means that, via our triage process, we will evaluate and assess the risk associated with sharing data and information and will assume that data and information which we hold, as data custodian, can be made available unless there is a risk identified in doing so, such as cyber, commercial or personal.

As part of our commitment to sharing data, we have established a dedicated Data Governance and Open Data team within SP Energy Networks. It is the role of this team to ensure that our Data is effectively governed, that a suitable Data Governance framework is in place, and that we are meeting our obligation under Ofgem's Data Best Practice Guidance.

Our Open Data team are responsible for ensuring that we are effectively and efficiently triaging and sharing all relevant data and information with our customers and stakeholders, and that all Open Data requests are responded to within a timely manner – in line with service level agreements – and that the data provided meets the needs of our customers and stakeholders. We are also proactively working with stakeholders in identifying, and developing, datasets for future publication. Our Open Data Team play an active role in industry working groups to ensure that our information within the portal remains relevant, and we actively monitor industry trends in order to identify and develop datasets not yet published on the SPEN Open Data Portal which would be of value to our Customers and stakeholders.

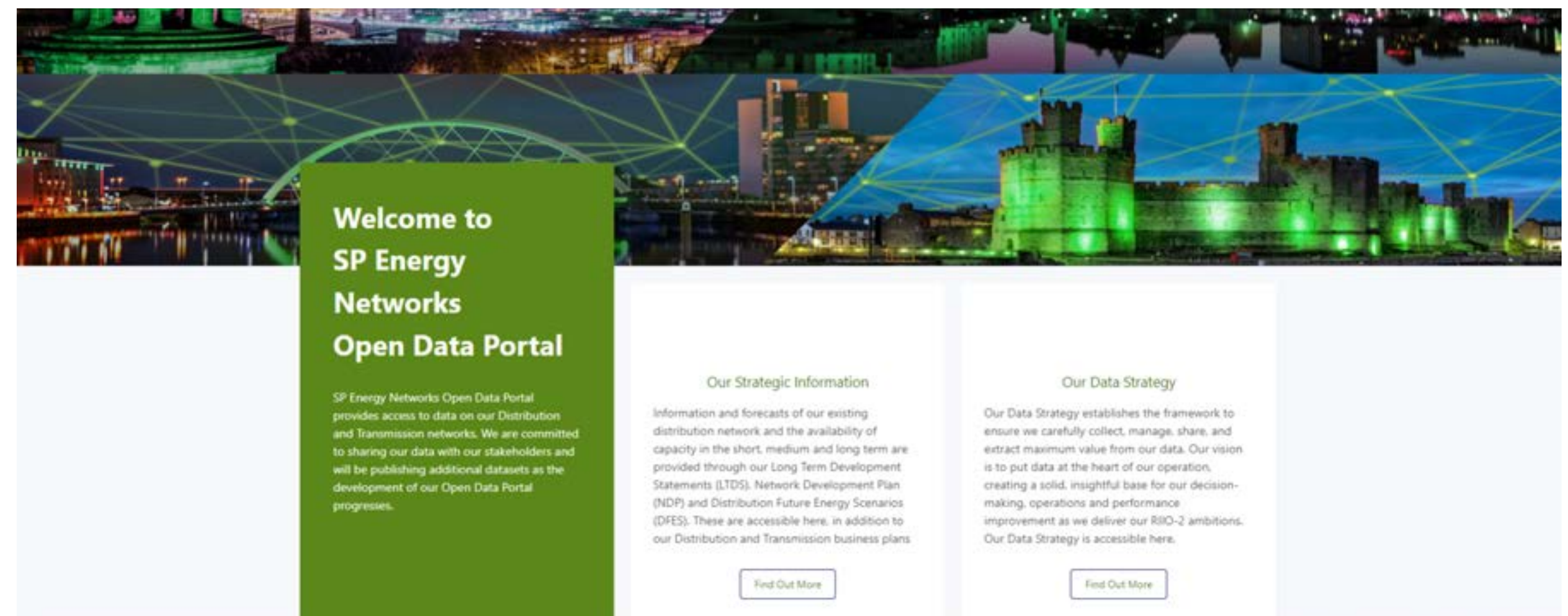
### Building our capabilities – Our Open Data Portal

To enable us to efficiently and effectively share our data, we have developed and launched an online "Open Data Portal". This portal can be freely accessed by all our customers and stakeholders via the SP Energy Networks website. The site enables users to search, view, and export datasets in simple, standardised formats, supporting them in fields such as Academia, Consulting, Business Development, and Innovation. In the last year, our Open Data team have successfully facilitated over 200 requests for access to our data. This has included requests for information on the location of our network assets, the capacity of our network, and the investments we have delivered.

The portal has been developed with our customers and stakeholders, and hosts a wide range of information, including half hourly historic and forecast views of demand and generation for our grid and primary substations; generation connection capacity heat maps; embedded capacity registers for generation and storage resources; shapefiles of our installed assets; and secondary network ratings and utilisation. We also publish a range of network planning data including our Distribution Future Energy Scenarios (DFES), our Network Development Plan (NDP), our flexibility tenders and results, and our long-term development statements (LTDS).

Users can easily search our data catalogue and detailed metadata, as well as independently download, export and consume via an API. Developments for this portal will focus on new datasets aligning with our Stakeholder priorities. Work is also underway to develop visualisation capabilities, enhancing the experience for users through a more visual representation of the datasets. Since the launch of our portal, we have received positive feedback from our stakeholders about the accessibility of our data, and we are actively working with stakeholders to identify opportunities for improvement.

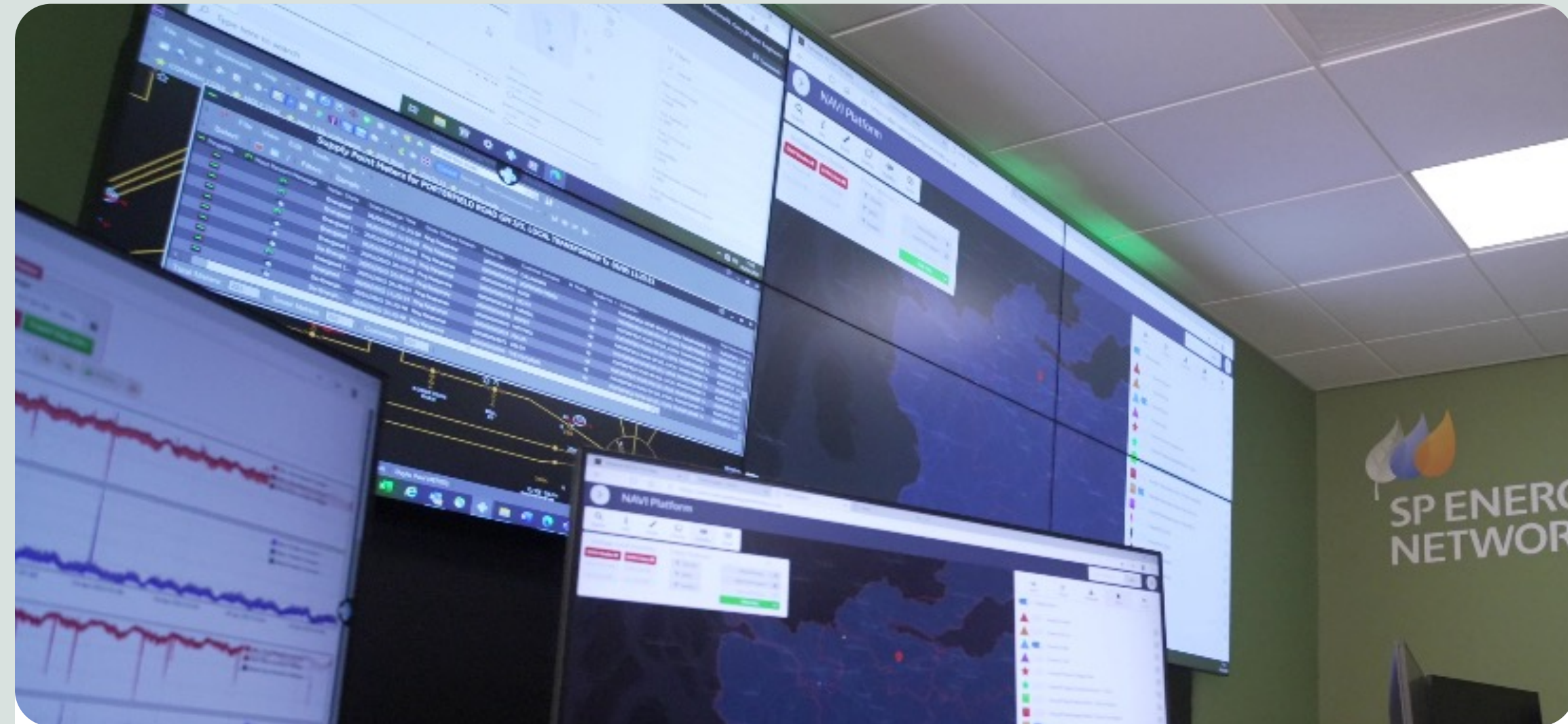
We hope that you will take time to familiarise yourself with the Open Data Portal and its contents, and would love to hear your ideas for future developments, or datasets, which would meet your needs by contacting us at: [opendata@spenergynetworks.co.uk](mailto:opendata@spenergynetworks.co.uk).



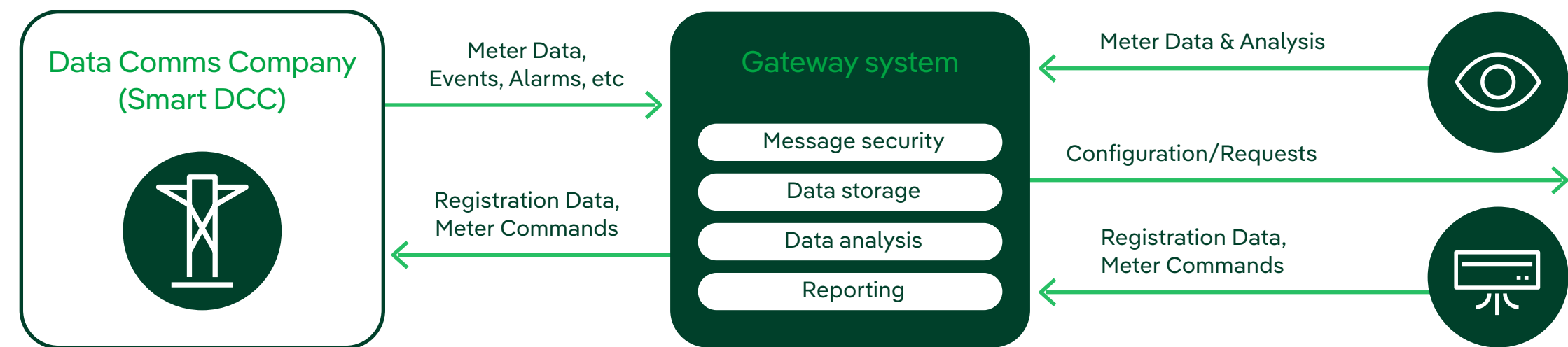
# Smart Meters

Smart Meters – By 2025, energy companies will have offered 50 million customers a smart gas and electricity meter.

Although the installation of smart meters is carried out by energy supply companies, DNOs have an important role to play.



Smart Meter Data Flow



## Smart Meter Systems & Data

Electricity Suppliers have been installing smart meters for several years. Initially, these were first generation SMETS1 devices, which at the time only the installing Supplier could communicate with. This meant that SP Energy Networks, as a Network Operator, could not connect to SMETS1 meters. In addition, when the customer changed supplier, the new supplier could not connect to the meter, meaning it instantly became non-smart.

The next generation SMETS2 meters were first installed in 2017, and DNOs such as SP Energy Networks could communicate with these through the UK smart infrastructure, managed by the Data & Communications Company (Smart DCC). Smart DCCs working partnerships provide a communication platform which operates across the UK.

Smart DCC’s systems were then developed to allow communication with the older SMETS1 devices. Following initial pilots, the “enrolment to DCC services” gathered momentum in 2020, and SP Energy Networks were finally able to connect to SMETS1s from May 2021. The SMETS1 enrolment programme is driven by suppliers, and is being undertaken on a gradual basis, expected to be completed by the end of the 2023/2024 regulatory year.

By the end of the 2022/23 regulatory year, we were able to connect to and retrieve data from approximately 1.5m smart meters (SMETS1s and SMETS2s), approximately 42% of our connected customers.

As the SMETS1 enrolment to Smart DCC progress, and as SMET2 installations continue, we expect to be able to connect to an increasing number of smart meters and their data every week. Our Smart Meter Systems team focus on using this data to give more detailed information about the status of our network. This will better inform the design and management of the network as we respond to the uptake of low carbon technologies. It will also help us identify power outages, and consequently improve our service to customers.

As in previous years, we again identified benefits from using smart meters and the associated data in 2022/23, increasing in line with the volumes of communicative smart meters.

An area of focus for SP Energy Networks relates to the “power outage notifications” from the on-site smart metering equipment. Unfortunately these are received only from the SMETS2 device installations, and can only be considered as an indication of possible power failure. On receipt of the notification, we identify whether or not the customer is linked to an existing network failure. Where this is not the case, we have an automated process which sends a message to the meter, and the response, or lack of response, gives a clearer indication of a loss of supply. We can send messages to the SMETS1 devices in the same area, and use all of the responses to identify a likely network fault. This process may, in some cases, mean we become aware of the issue before customers call us. As a result, we may be in a position to react in a shorter period of time, in terms of identification of the fault, the cause, and the ultimate restoration of supply to our customers.

In addition, we can use the outbound message process when a customer calls to report an apparent loss of supply. Responses which tell us the supply is intact prevent unnecessary visits, and our Call Agents can assist calling customers in determining other reasons for having no supply, such as an internal fault or meter failure.

During 2022/23, we opened a pioneering new LV (Low Voltage) Support Room which is driven by the data received from smart meters. The process and data we use helps engineers find more precise fault locations where repairs are required. In some cases, the cost of resolving the fault can be lower than those using conventional practices, as is the disruption to our customers in terms of length of time off supply.

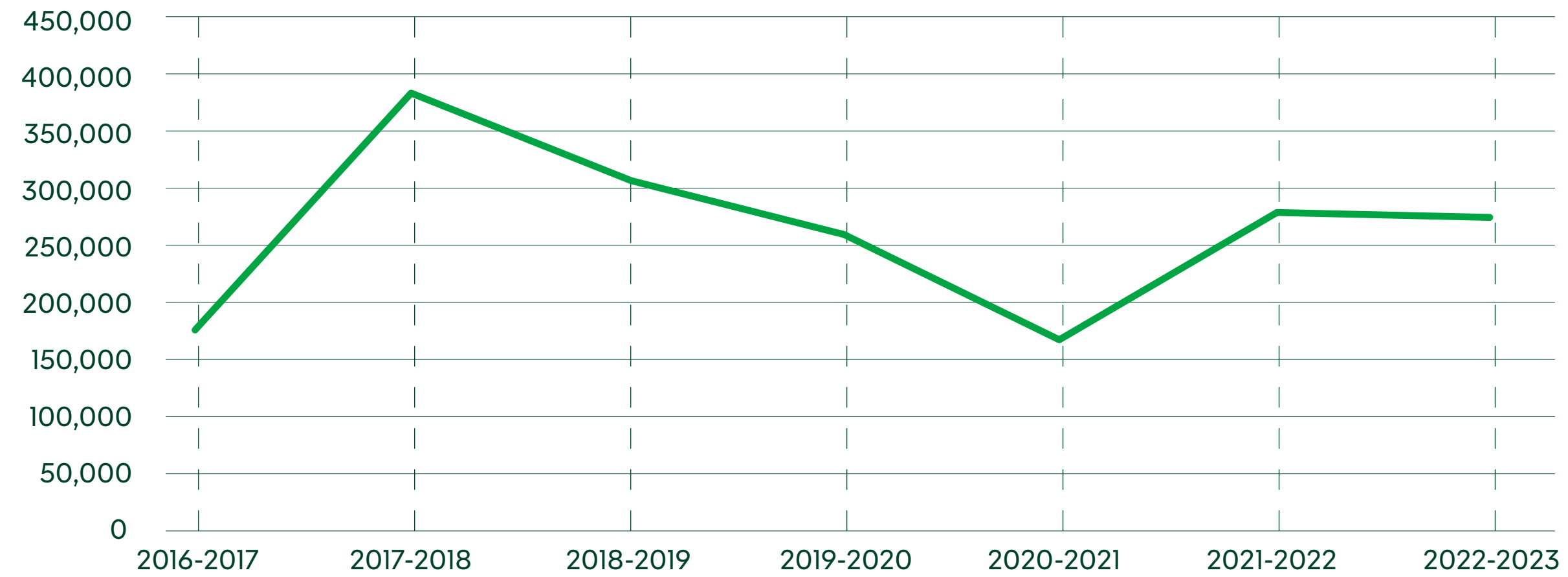
The roll-out programme continues and is scheduled to conclude by the end of 2025.

### Smart Meter Installs and Interventions

In a number of our customers' properties, we are required to upgrade our assets to enable the fitting of a Smart Meter (or a conventional meter) or to respond to an emergency situation.

This activity is known as an "intervention". This year we have completed just over 11,000 interventions. We have continued to work with the multi-party team including DNOs, Suppliers, Meter Installers, MOCOPA, ENA and DESNZ, to ensure we have the most up to date information to support customers, extending this to our supplier bilateral meetings to check the customer contact information for those customers where we have difficulty gaining access.

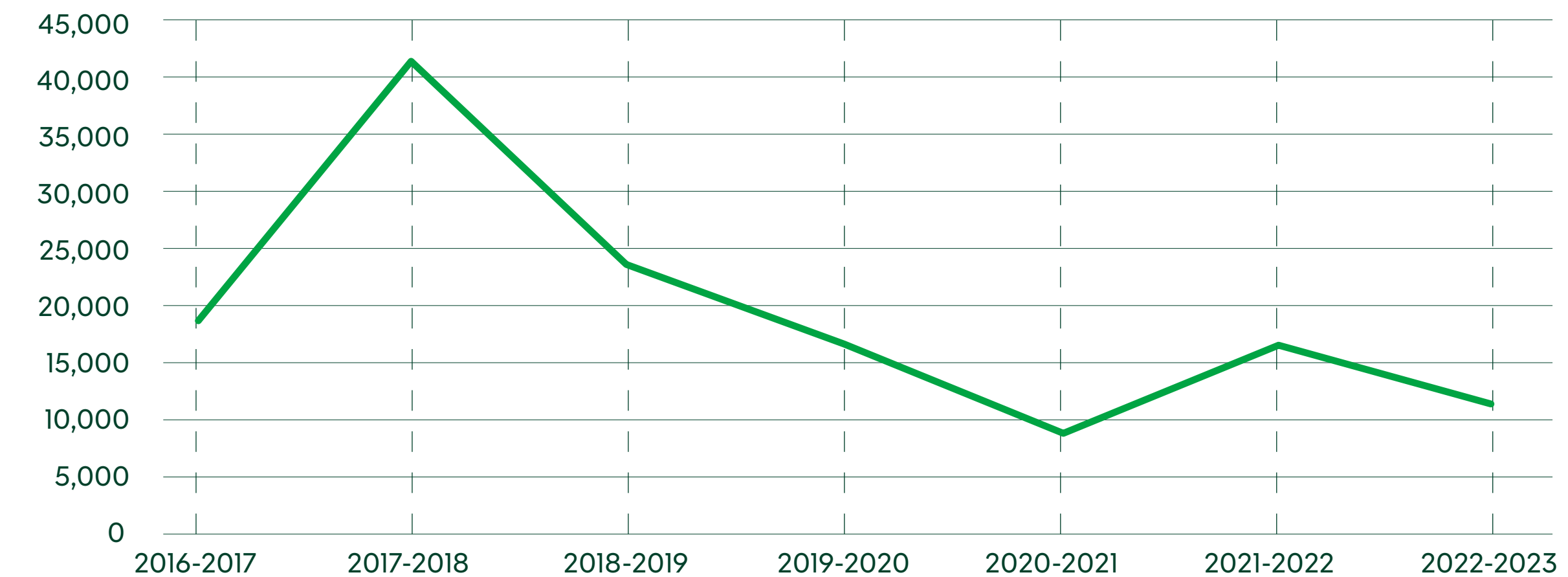
#### Smart Meter Installs



#### A Smart Meter Installation



#### Interventions



#### A broken terminal cover requiring an intervention



## Our most valuable assets are our people

As we accelerate towards Net Zero, our workforce needs to continue to evolve to meet changing workload, technology, sustainability, and portfolio requirements. Our existing workforce is already becoming more agile and developing new skills and our workforce programmes are also evolving to meet those new challenges. We need to maintain our long-term talent pipeline to address an industry facing skill shortages and continuing high levels of retirement.

We have continued to build on our workforce renewal programmes to maintain a skilled and effective workforce through a strategy that incorporates growing our own talent through trainee programmes to replace high levels of staff retirement. Our goal while doing this is to re-balance our age profile to reduce the median age and address the peak of staff nearing retirement, without creating a new peak that would become a problem in 30-40 years' time. This strategy is supported by an approach of recruiting locally and training centrally to drive to broaden the appeal of our sector to attract new entrants. We also recognise the requirement to prepare for the changing skills and technologies needed for the future of our industry.

Through this we aim to raise the sector profile and value proposition whilst we adopt an inclusive approach to employing diverse talent. This will expand the sector talent pool and ensure that it reflects the communities we serve, to make our sector workforce more inclusive. The combination of this has seen the business spend over 150,000 hours of technical training in our Technical Training Centres at Hoylake and Cumbernauld.

### Engineering Skills and Craft Trainees

We have continued to build talent through our trainee programmes. To do this we have recruited 37 apprentices and 59 trainee craftspersons. In Engineering, 34 Year-In-Industry opportunities and 54 scholars.

We have also continued to provide ongoing STEM and career support to local schools, colleges, and Universities and at events such as the All-Energy event 2023.

Through our programmes we have formed our core pipeline of highly skilled engineering and technical staff. 95% of our craft roles and 75% of our core engineering and technical roles are filled through our trainee pipeline.

We continue to recruit annually at trainee level, and we have expanded our graduate programme to incorporate cyber security, digitalisation, environmental and data science areas to build the skills and technologies needed on our journey to Net Zero. This will ensure our current and future workforce benefits from new and enhanced capabilities, providing them with necessary skills for the future.



88

Industrial trainees  
recruited

96

Specialist and Engineering  
trainees recruited

## Contact us

### How you can get involved

#### Stakeholder engagement

If you are interested in our services and projects, if our work has the potential to impact you, or if you have an influence over the work we do, then you are a stakeholder. We want to know your views on our plans, so that we can deliver the best service possible.

We already work with a wide range of stakeholders, including domestic customers, local authorities, charities, other utilities, people wishing to connect to our network, school pupils, vulnerable customers, and innovators amongst others.

Registering as a stakeholder is easy and enables you to have your say on our projects and services. Please register here:

[spenergynetworks.co.uk/register](https://spenergynetworks.co.uk/register)

## General Enquiries

Please call us free on: 0330 1010 444

Email: [customer care@spenergynetworks.com](mailto:customer care@spenergynetworks.com)

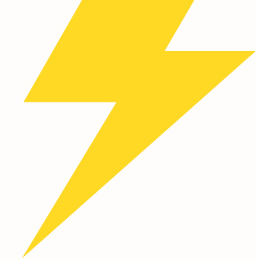
#### Central and Southern Scotland

Customer Service  
SP Energy Networks  
SP House  
320 St Vincent Street  
Glasgow G2 5AD

#### Cheshire, Merseyside, N. Wales and N. Shropshire

Customer Service  
SP Energy Networks  
PO Box 168  
Prenton  
CH26 9AY

**POWER CUT?  
CALL 105**



To report a power cut or damage to electricity power lines or substations, call the new national Freephone number – 105.

You can still reach us on our existing numbers:

#### Central and Southern Scotland

0800 092 9290

#### Cheshire, Merseyside, N. Wales and N. Shropshire

0800 001 5400



# Appendix A

Our business plan commitments in full



# Reliability and availability

We are committed to improving the reliability and availability of supply to our customers. Strong asset stewardship is achieved through understanding our assets through enhanced monitoring and data analysis, enabling us to target our investments to optimise performance, whilst developing innovative solutions to maintain and improve reliability and availability.

Status	Commitment	SPD this year	SPM this year
Below Target	Reduce by 100% the number of customers experiencing a power cut greater than 12 hours by 2023.	A reduction of 97% by March 2023, against our baseline.	A reduction of 92% by March 2023, against our baseline.
On Target	Reduce the average number of times our customers lose their power supply by 7%. Reduce the length of time those customers are without power by 16%. By doing this reduce the average time our customers are off supply by 25%.	Interruptions down by 30% and average duration down by 21%.	Interruptions down by 11% and average duration down by 16%.
Below Target	Improve service to 40% of our poorly served customers.	Improved service to 50% against our baseline year.	Improved service to 22% against our baseline year.
On Target	Mitigate pluvial flood risk at 28 high risk grid and primary substations.	Action completed in 2015.	Action completed in 2015.
On Target	Ensure all rural customers benefit from resilient to severe weather events network by 2034.	Incorporated into investment/modernisation plans.	Incorporated into investment/modernisation plans.
On Target	25% of rural high voltage network and a further 16% of low voltage resilient to severe weather by 2023.	Incorporated into investment/modernisation plans.	Incorporated into investment/modernisation plans.
On Target	Deliver a guaranteed standard to reconnect our customers within 36 hours after storm events.	0 customers were off supply greater than 36 hours.	0 customers were off supply greater than 36 hours.
On Target	Accelerate Fluvial Flood protection plans to complete by March 2015.	Action completed in 2015.	Action completed in 2015.
On Target	Increase substation resilience to 72 hours.	Action completed in 2015.	Action completed in 2015.

## Customer satisfaction

We engage regularly with our customers to understand what they want from us and act on feedback to improve our service. We have made consistent improvement which has made a significant impact on customers experience.

Status	Commitment	SPD this year	SPM this year
●	Answer calls in less than 10 seconds and never force disconnect.	18.54 second's average.	20.90 second's average.
●	Ensure abandoned calls are less than 1%.	0.92% in Faults and Emergencies.	1.16% in Faults and Emergencies.
●	Provide restoration time for every outage.	Embedded in standard business process.	Embedded in standard business process.
●	Write to all customers in advance of planned interruptions and day before reminder by SMS (text).	Embedded in standard business process plus face-to-face visits targeting 100% Vulnerable Customers ahead of every planned outage.	Embedded in standard business process plus face-to-face visits targeting 100% Vulnerable Customers ahead of every planned outage.
●	Respond and resolve all complaints quickly.	90.4% of all complaints resolved within 1 day.	91.9% of all complaints resolved within 1 day.
●	Reduce number of complaints by understanding root causes.	Ongoing analysis understanding root cause including impact of weather conditions.	Ongoing analysis understanding root cause including impact of weather conditions.
●	Achieve a 20% improvement in industry measure of customer satisfaction scores by 2023.	Overall score of 9.10. Above DNO (Distribution Network Operator) average of 9.02.	Overall score of 9.20. Above DNO (Distribution Network Operator) average of 9.02.
●	Hot meals and accommodation provided after 48 hours to all customers during exceptional events (after 12 hours for vulnerable customers).	Embedded in standard business process.	Embedded in standard business process.
●	Benchmark industry performance utilising Institute of Customer Service (ICS).	ICS benchmark score of 90.5/100 against industry average of 74.1/100.	ICS benchmark score of 90.5/100 against industry average of 74.1/100.
●	Invest in people at every level.	Designed in to management systems and reporting.	Designed in to management systems and reporting.
●	We will include info about our Guaranteed Standards of Performance (GSOP) in our annual customer awareness campaign.	GSOP information is communicated to customers annually.	GSOP information is communicated to customers annually.
●	We will contact customers impacted by an outage to keep them informed via different channels.	We communicate with customers through multi channels during power outages.	We communicate with customers through multi channels during power outages.
●	We will use Smart Meter data to proactively help customers.	Smart meter penetration still low, however using data where available to proactively contact customers during outages.	Smart meter penetration still low, however using data where available to proactively contact customers during outages.

## Consumer vulnerability strategy

We now deliver a range of services available to all vulnerable customers which have been developed in our most vulnerable communities. We strive to exceed our business plan commitments to ensure that the customer receives the best service possible.

Status	Commitment	Jointly across SPD and SPM licence regions this year
●	Send a welcome letter and info pack to every new customer on the Priority Services Register (PSR).	Embedded in standard process.
●	Proactively contact all PSR customers during an outage.	Embedded in standard process where a customer is confirmed of supply.
●	Contact all vulnerable customers in advance of planned power interruptions.	Embedded in standard process where a customer is confirmed of supply – with flexibility for more frequent contact of needed.
●	Hot meals, drinks and company offered to vulnerable customers after 12 hours during exceptional events.	Embedded in standard process.
●	Winter packs issued to PSR customers.	Delivered to all of our PSR registered customers who request a pack as a standard business process – with assistance from Red Cross partners during significant events.
●	Automatic compensation payments following a fault to all PSR customers post 12-hour restoration during exceptional events.	Embedded in standard process.
●	Proactively contact all PSR customers at least every 2 years.	Embedded in standard process.
●	We will always ensure our people are trained to recognise and deal with vulnerable customers sensitively.	We have continued to rollout training to our staff, focusing this year on contact centre and new start training.
●	We will continue to establish mechanisms to share information on vulnerable customers with other agencies and authorities.	Data sharing through informed consent in place. Continued our collaboration with partners to ensure that our customers can access more comprehensive support, delivered efficiently, from a multitude of relevant organisations including emergency support, utilities, suppliers.

## Consumer vulnerability strategy (continued)

We now deliver a range of services available to all vulnerable customers which have been developed in our most vulnerable communities. We strive to exceed our business plan commitments to ensure that the customer receives the best service possible.

Status	Commitment	Jointly across SPD and SPM licence regions this year
●	We will engage with our communities to make them aware of our Priority Services Register and work in local communities impacted by outages to ensure they have access to hot meals, drinks, and company. We will continue to work with Emergency Planning Officers to provide support to our vulnerable customers during outages.	Targeted awareness carried out to promote Priority Services Register in our communities through several channels specifically aimed at reaching vulnerable customers. Stretching targets in place to ensure we have 80% of customers signed to our register for each category where they are eligible.
●	We will deliver initiatives that will help the fuel poor by working with agencies such as Energy Action Scotland, National energy Action, Scottish Government Fuel Poverty Group, etc.	We work with local partnerships to deliver support services to our customers which delivered a total economic value of on average £1.44 to customers for every £1 spent.
●	We will continue to work with agencies to understand how we can collaborate to best support our customers and communities.	We have worked closely with a number of agencies to understand vulnerability customer needs and how we can best offer support.

# Stakeholder engagement

We put stakeholders at the heart of what we do; it's part of our culture. Our comprehensive strategy has grown in maturity and is embedded in our organisation at all levels. We deliver it with passion, belief, and strong executive leadership, placing robust, meaningful engagement at the core of all our activities.

Status	Commitment	Jointly across SPD and SPM licence regions this year
●	We will continue our annual customer awareness campaign to raise awareness of who SPEN are, and information of when and how to contact us.	<p>Our awareness campaign had a PR activity reach of 438m impressions which included 224 pieces of coverage, 2x 30 second daily radio ads over a four-week period, digital partnership and ambassador activity delivering key 105 power cut awareness messages to our customers and communities.</p> <p>Our main campaign activation had 89m adult impacts and included Phone Kiosks, Bus Streetliners and bus passenger panels. We hand delivered 95,000 postcards and 20,000 posters to key community hubs across our operational areas to increase our high street presence with a focus on hard-to-reach communities.</p> <p>Our digital activity included digital and social media ads as well as geotargeted video on demand ads across ITV, STV and Channel 4 players. We activated tactical short term storm activity across large, high-impact 48-sheet digital roadside billboards during periods of bad weather, all to support the delivery of key messages throughout our communities. We added 485,000 new vulnerabilities to our register this year (i.e., multiple vulnerabilities per household).</p>
●	We will report our performance against plan and outputs at an annual stakeholder event.	<p>Performance is reported to stakeholders at several times a year through our Strategic Stakeholder Panels and events and annual district updates.</p> <p>In 2022/23, we held a broad range of engagement events including our Net Zero Conferences, Connections Panels, and Independent Net Zero Advisory Council sessions, including senior leaders which facilitated a range of strategic conversations with a broad range of key stakeholders.</p>
●	We will provide an annual stakeholder communication on our engagement activities and actions.	<p>An annual Distribution stakeholder engagement report is provided to Ofgem and key stakeholders and published on our website detailing our activities, actions, and outputs: <a href="https://www.spenergynetworks.co.uk/pages/stakeholder_reports.aspx">https://www.spenergynetworks.co.uk/pages/stakeholder_reports.aspx</a></p> <p>We produce regular online newsletters, social media posts and stakeholder event updates for stakeholders with details of industry developments, innovations, and investment.</p>
●	We will further develop our online community to support our stakeholder, customer, and employee engagement programmes.	<p>Developed over the last decade, our online stakeholder community is a digital platform to facilitate two-way conversations with our valued stakeholders.</p> <p>In 2023 we are launching a new online platform – Engage 360 powered by Tractivity, the stakeholder management system used by SPEN. This will be a fully branded online portal which will allow for additional functionality.</p>
●	We will introduce an annual programme, so stakeholders know what engagement to expect.	<p>We have embedded an annual programme of engagement in our business, we have a dedicated events page on our website which promotes transparency of our engagement opportunities for our stakeholders to engage with us allowing stakeholders to see 100% of engagements on the SP Energy Networks website and, if applicable, register to attend.</p>
●	We will embrace stakeholder engagement as 'business as usual' and will build on the approach of more focused and centralised engagement.	<p>We're extremely proud to announce we remain one of the top scoring utilities for our Accountability health check, with a score of 89%, one of the highest scores ever achieved globally. On the back of this audit, we have reviewed all recommendations for future improvement and are embedding actions across our centralised engagement team.</p>

# Connections

Our network is expanding to accommodate renewable generation more quickly than any other DNO. We are providing a better service for new connections by adhering to our business plan commitments.

Status	Commitment	SPD this year	SPM this year
●	Contact the customer within 1 working day of receiving their application to provide a single point of contact to manage their project through our quotation process.	We endeavour to contact the customer within 1 working day of receiving their application as a standard business process.	We endeavour to contact the customer within 1 working day of receiving their application as a standard business process.
●	Reduce the average time taken to issue quotations year on year.	The average has increased from 3.97 to 5.33.	The average has increased from 4.93 to 5.81.
●	Contact the customer within 2 working days of receiving their payment to provide a single point of contact to manage their project through our delivery process and where possible provide a date for connection.	96.6% contacted within 2 days.	98% contacted within 2 days.
●	Engage and proactively work with our customers to meet their preferred completion and 'power on' date.	98.9% of completion dates are as agreed with customer.	100% of completion dates are as agreed with customer.
●	Reduce the average time to deliver connections year-on-year. (The Time to Connect targets are 42.08 for a single property and 52.70 working days for multiple properties).	Our Average time to connect was 32.07 working days for single premises and 34.07 working days for multiple premises an improvement year on year.	Improved the time to connect averages for both single premises from 35.68 to 33.27 and multiple premises from 39.98 to 38.01.
●	Reduce number of complaints by understanding root causes.	Ongoing analysis understanding root cause including impact of weather conditions.	Ongoing analysis understanding root cause including impact of weather conditions.
●	A 'Process Explained' leaflet will be issued to all customers at initial enquiry stage and is available on the website.	Embedded in standard business process.	Embedded in standard business process.
●	Hot meals and accommodation provided after 48 hours to all customers during exceptional events (after 12 hours for vulnerable customers).	Embedded in standard business process.	Embedded in standard business process.

## Connections (continued)

Status	Commitment	SPD this year	SPM this year
	Ask our customers when they want their quote and work with them to deliver a fast-track quotation and connection when they need it.	82.3% of quotes provided within timescales agreed with customer.	70.32% of quotes provided within timescales agreed with customer.
	Continually develop and improve our processes, based on our customer's expectations and customer feedback.	Ongoing activity – as per our ICE plan.	Ongoing activity – as per our ICE plan.
	Our processes and internet site will be continually developed and improved, based on our customer expectations and feedback.	Wide range of customer-facing improvements delivered with supporting feedback received from our Major Customer Monthly Survey.	Wide range of customer-facing improvements delivered with supporting feedback received from our Major Customer Monthly Survey.
	Incentive on Connections Engagement ICE.	Engagement drove 13 improvement actions – 100% of which already delivered.	Engagement drove 13 improvement actions – 100% of which already delivered.
	Ensure our average time to deliver connections is in the top group of DNOs.	8th in the DNO league table in Ofgem's 2021/22 Annual Report.	12th in the DNO league table in Ofgem's 2021/22 Annual Report.
	Reduce our general load investment trigger by 20%, enabling quicker connections in future.	We are on-target and delivering against our load related reinforcement plan to facilitate capacity in demand congested areas of network.	We are on-target and delivering against our load related reinforcement plan to facilitate capacity in demand congested areas of network.
	Use innovative solutions to meet the uptake of low carbon technologies.	We have connected customers using non-firm flexible connections and will be deploying wide scale Active Network Management over the next few years.	We have connected customers using non-firm flexible connections and will be deploying wide scale Active Network Management over the next few years.
	Ensure our customers are kept informed of the connection process throughout every stage.	Embedded into business process – monitoring and reporting in place to deal with exceptions.	Embedded into business process – monitoring and reporting in place to deal with exceptions.
	Be proactive in our approach, minimising the need for customers to have to contact us – we will contact them first.	Embedded into business process – monitoring and reporting in place to deal with exceptions.	Embedded into business process – monitoring and reporting in place to deal with exceptions.
	Communicate with our customers through their media channel of choice.	Customers preference of available channels captured in our systems.	Customers preference of available channels captured in our systems.
	Develop communication plans tailored to meet individual needs.	Customer communications recorded in our systems, monitoring in place to drive continuous	Customer communications recorded in our systems, monitoring in place to drive continuous improvement.

## Connections (continued)

Status	Commitment	SPD this year	SPM this year
●	Through our communication plans we will remove any uncertainty.	Ongoing activity – as per our ICE plan.	Ongoing activity – as per our ICE plan.
●	Actively engage customers and stakeholders through events, monthly surgeries, surveys and one to one meetings to understand their ongoing needs.	Ongoing activity – as per our ICE plan.	Ongoing activity – as per our ICE plan.
●	Continue to work with our major customers to further improve the service we offer.	Ongoing activity – as per our ICE plan.	Ongoing activity – as per our ICE plan.
●	Build our business, operating and improvement plans around the needs of our customers and stakeholders.	Ongoing activity – as per our ICE plan.	Ongoing activity – as per our ICE plan.
●	We will continue to work proactively with 3rd party groups wishing to connect to our network.	Partnerships and bi-annual workshops established in 2017.	Partnerships and bi-annual workshops established in 2017.
●	We will continue to promote competition in every way we can.	Covered in our adoption of Competition in Connection Code of Practice, for example additional data on loadings and network maps provided.	Covered in our adoption of Competition in Connection Code of Practice, for example additional data on loadings and network maps provided.
●	We will continue to engage with Ofgem and ICPs to extend the boundaries of competition.	Ongoing engagement – including 2 dedicated workshops in SPD's area.	Ongoing engagement – including 2 dedicated workshops in SPM's area.



# Environment

We recognise the significance of our impact on the environment, both as a direct result of our operations and, indirectly, by helping stakeholders achieve their own environmental goals.

Status	Commitment	Jointly across SPD and SPM licence regions this year
●	Utilise Smart Meter technology to ensure all generation sources are supported quickly.	<p>Installations under the UK's Smart Metering Implementation Programme continued at pace during the 2022/23 regulatory year, showing sustained recovery after the Covid-19 pandemic impacts seen in previous years. By 31st March 2023 there were approximately 391k SMETS2 devices in our SP Distribution licence area, with approximately 390k in SP Manweb area.</p> <p>In addition to the SMETS2 devices, more of the SMETS1 devices were enrolled into the UK's Smart DCC infrastructure, allowing us to connect and retrieve data from these older devices. By the end of the year, we were able to communicate with 434k SMETS1s in the SP Distribution area, and another 306k in SP Manweb. Continued installation and enrolment throughout 2022/23 means that we were able to retrieve data from 1.5 million smart meters by the end of the year, around 43% of our customer base.</p>
●	Connect 4.5GW of Distributed Generation by 2018, with up to 5.5GW of generation connected to our network by 2023.	We have now connected 5.4 GW of distributed generation over SPM and SPD to the existing network.
●	Carry out "Smart" asset replacement – using future proofed assets where justified.	Our LV Engine project is a trial of Smart Transformers, powered by Power Electronics and cutting-edge intelligent control, to facilitate the connection of low carbon technologies whilst delivering value for money for our customers. After completion of detailed design phase and building a number of prototypes which have passed various factory tests, we have tested the overall LV Engine scheme within a laboratory environment to prove equipment manufactured by different vendors can operate together to deliver intended functionalities. We demonstrated that the LV Engine scheme can provide a hybrid AC and DC supply delivering various smart functionalities. We are now planning for the first installation in Oct 2023.
●	Identify Low Carbon Technology hotspots using network monitoring, data from Smart Meters and Stakeholder Engagement.	We have now fully implemented the next generation of heat maps. These have been developed through extensive consultation with our stakeholders and are available on our <a href="#">website</a> .
●	We will underground 85km of overhead lines in AONB (Areas of Outstanding Natural Beauty)	We continue to target measures to reduce the visual impact of our network by removing overhead lines from Areas of Outstanding Natural Beauty (AONB). This year we removed a further 2km of overhead line and replaced it with 4km of Underground Cable. We fell short of our target of undergrounding 85km by the end of ED1 as many projects were scheduled towards the end of ED1 and were delayed due to the Covid-19 pandemic. However, we have a full programme of works heading into ED2.
●	Install lower loss transformers to reduce losses by 50% at more than 1111 of our secondary substations	During the 2022/23 reporting year we have installed 131 lower loss transformers in SPM and 261 lower loss transformers in SPD. We have so far replaced a combined SPD and SPM total of 1154 transformers during ED1, saving 35,946 MWh of losses. Based on the current average carbon intensity of grid electricity, this would be equivalent to 6,951 tCO <sub>2</sub> e.

## Environment (continued)

Status	Commitment	Jointly across SPD and SPM licence regions this year
●	We will reduce our carbon footprint excluding network losses by 15% by 2023	<p>In 2022/23, we achieved a 42% reduction in our combined (SPD &amp; SPM) carbon footprint, excluding losses, since setting a 15% reduction by 2023 target in 2013/14. The Business Carbon Footprint graph shows our progress through ED1. This represents a 9% reduction in SPM and a 59% reduction in SPD.</p> <p>This is mainly due to reductions in building energy use due to moving to REGO tariffs and reductions in operational and business travel but offset by increases in SF6 leakage due to including all emissions from disposed assets. Electricity losses (energy lost or stolen from the network as it travels from source to user), remains the largest contributor to our Business Carbon Footprint and also the most influenced by external factors.</p>
●	Use electronic vehicle management system to optimise our vehicle utilisation keeping vehicle numbers, broadly similar in ED1.	Our vehicle tracking system continues to allow us to track our mobile assets and their emissions effectively. Since the start of ED1, our operational travel emissions have reduced by 8%. Vehicle numbers remain similar this year at 826 as we progress towards electrification of our fleet.
●	Increase the use of electric vehicles and charging points.	During the 2022/23 reporting year, we introduced another 5 electric vehicles to our fleet of pool cars. This brings our electric vehicle fleet to 32 in Distribution. Since the start of ED1, we have installed 32 charging points for Electric Vehicles at our Depots and Offices. Although we have installed no new charge points in the 2022/23 reporting year, we have plans to install 20 at Currie substation during 2023.
●	Install oil containment around all new and high-risk plant containing high volumes of oil.	In SPD during ED1 we have worked on 78 pieces of plant equipment to install oil containment with 6 taking place in the reporting year 22/23. In SPM during ED1 we have worked on 70 pieces of plant equipment to install oil containment with 3 taking place in the reporting year 22/23.
●	Exceed IEC international standards for SF6 switchgear by specifying a maximum leakage rate five times more stringent for 33kV and below and twice as stringent for higher voltages.	In 2022/23 we continued to drive the supply chain towards developing equipment with reduced SF6 leakage rates, having embedded this requirement in our procurement and specification processes. The International Electro-Technical Commission (IEC), the body responsible for setting international guidance recommends a leakage rate of 0.5% (indoor equipment). Our equipment specifications demand a more stringent maximum leakage rate of 0.1% for all indoor and 0.25% for all outdoor equipment each year.
●	Reduce oil leaks by 50% through the replacement of poorly performing 132kV cable in SPM.	In SPM we have 152km of fluid filled cables and topped up a total of 13,421 litres in the 2022/23 reporting year with a leakage rate of 2.01% due to 4 significant faults in Merseyside. All leaks have been repaired and we have returned to average level. In SPD we have 31km of fluid filled cables and topped up 25 litres with a leakage rate of 0.03%. At the start of ED1 we set ourselves a target to reduce leakage in our SPM fluid filled cables. Since reporting year 2015/16 we consistently reduced our leakage year on year to reach 84% reduction by 2021/22.
●	Engage on the environmental impacts of our developments from a very early stage.	We have a dedicated Environmental Planning team who engage with our engineers and legal teams in our development's early stages as a standard business process.

## Environment (continued)

Status	Commitment	Jointly across SPD and SPM licence regions this year
●	Utilise low carbon alternatives to travel, through the use of technology and smarter ways of working.	<p>Since the start of EDI we have reduced our business travel carbon emissions by 46%. This overall reduction is a result of accurate apportionment between our licenses, reduction in overall travel, competitive rail pricing and increased staff awareness of carbon emissions from travel. In 2022/23 we have seen an increase of 21% in emissions in business travel across SPM and SPD combined, since previous year due to easing of COVID-19 restrictions. However, this is still 24% lower than pre-Covid emissions. The introduction of new travel and teleworking policies during this time will allow us to continue to target this area for sustained and further reductions in the coming years.</p>
●	Monitor and reduce the energy used within our substations, invest in lower carbon buildings, and reduce energy use in existing buildings	<p>Until 2019, energy consumed within our depots and substations was our second biggest emissions contributor after losses, and it was therefore imperative that we work to reduce the carbon emissions related to energy use at our sites. In 2019, we amended our tariff to REGO '(Renewable Energy Guaranteed Origin)' which provides us with guaranteed zero emission electricity. By 2021/22, our carbon emissions from buildings reduced down to only 2% of our total footprint, however, in 2022/23 we were unable to secure a REGO tariff for the full period resulting in an increase to 28%. We are now back on REGO tariffs and expect these emissions to reduce back to 2021/22 levels in future years.</p> <p>While we recognise that annual fluctuations in grid carbon intensity and our move to a REGO tariff contribute greatly to the reduction in the carbon footprint of our depots, substations, and buildings, we must also concentrate on reducing the kWh consumed. We are including LED light fittings in all new major projects and solar panel projects are underway at our Prenton, Lister Drive and St Vincent Crescent depots.</p>
●	Reduce costs to customers by developing modern "Smart Grid" network solutions	<p>We are carrying out a wide range of projects utilising Smart Grid network solutions to reduce customer costs and encourage greater market flexibility. We have identified specific opportunities and challenges split across three themes in this priority area namely:</p> <ul style="list-style-type: none"> <li>• Faster, Easier Connection</li> <li>• Preparing the Network for Low Carbon Technologies</li> <li>• Network Flexibility and Communications.</li> </ul> <p>As Smart Meters are rolled out across the UK, it is expected that this greater visibility of the LV network will provide sufficient intelligence to trigger Smart Grid dynamic network control, which in turn will release more capacity on the network for increased levels of LCTs.</p> <p>As part of the NIA funded innovation project NCEWS (Network Constraint Early Warning System), we developed an LV Connectivity Model which will allow us to annotate Smart Meter, EV, and other internal/external data sets in order to allow users to better understand the operation of SPEN's LV Network via the NAVI (Network Analyse and View) Platform and associated data exports. Our ambition is for this to become our central data management tool.</p>

# Health & Safety

Health and safety goes right to the heart of all our operations, it cannot be achieved successfully unless it is fully integrated with all other aspects of day-to-day business management.

Status	Commitment	Jointly across SPD and SPM licence regions this year
●	Lead the industry for public safety.	Zero Improvement Notices, Prohibition Notices or Prosecutions.
●	Maintain a positive relationship with the Health and Safety Executive (HSE) through positive engagement.	A range of discussions held with the HSE on a number of network related topics including HSE Priority Interventions with all DNOs, managing public safety and metal theft.
●	Lead an effective risk based public safety programme.	Wide range of initiatives including demonstrations and stalls at numerous agricultural shows including the Royal Highland Show, Anglesey Show and Royal Cheshire Show, support of safety education centres and Crucial Crew events.
●	Safeguard residents of flats and tenement buildings by continuing our major investment programme to modernise service positions and cables.	SPEN spent £5.0m modernising the electricity supply to residents of flats and tenement buildings in 2022/23.
●	Eradicate all low overhead line clearances across roads by April 2015 and continue to enhance public safety by upgrading all of our overhead line clearances to the latest industry technical standards by 2020.	SPEN spent £8.5m on OH Clearances in 2022/23.
●	Increase the rate at which we modernise our substations by over 20%, improving safety and security of supplies at a lower overall cost.	SPEN replaced 1,076 items in High Voltage Substations in 2022/23.
●	Meet or improve upon our accident rate performance metrics defined within our internal continuous improvement Health and Safety operating plans.	Staff Lost Time Accident Rate of 0.06. In 2022/23 we saw a reduction in the LTA Rate for staff from 2021/22.

## Health & Safety (continued)

Health and safety goes right to the heart of all our operations, it cannot be achieved successfully unless it is fully integrated with all other aspects of day-to-day business management.

Status	Commitment	Jointly across SPD and SPM licence regions this year
●	Conduct thorough incident investigations, learn lessons quickly and implement changes to make our business safer.	4 Panels of Inquiry were conducted in 2022/23
●	Help our contracting teams to reduce their accident rate.	Total Recordable Injury Rate (TRIR) of 0.77 against a target of 0.91 (100% target) for the contractor. A reduction from 2021/22.
●	Put the 'Health' into Health and Safety – our employees will benefit from a risk based occupational health monitoring programme.	471 employees completed Health Surveillance Monitoring assessments in 2022/23.
●	We will safeguard our staff, members of the public and minimise disruption to supplies by implementing additional security measures to reduce the impact of interference and metal theft at our high-risk substations.	Substation security continues to improve by means of asset modernisation and enhanced civils. We are also continuing to roll out e-padlocks on a priority basis.



# Glossary

## Areas of Outstanding Natural Beauty (AONB)

Means protected landscapes in England, Wales and Northern Ireland as defined in the National Parks and Access to the Countryside Act 1949 (and includes National Scenic Areas in Scotland, as comparable to AONBs). Ofgem provide DNOs with an allowance for undergrounding overhead lines in these areas.

## Customers Interrupted (CI)

The number of customers in every 100, whose supplies have been interrupted per year over all incidents, where an interruption of supply lasts for three minutes or longer, excluding re-interruptions to the supply of customers previously interrupted during the same incident.

### Customer Minutes Lost (CML)

The duration of interruptions to supply per year – average customer minutes lost per customer per year, where an interruption of supply to customer(s) lasts for three minutes or longer.

## Distributed Generation (DG)

Generation connected to the distribution network, such as wind turbines, domestic solar panels, photovoltaic farms, hydroelectric power, and biomass generators.

## Distribution Network Operators (DNOs)

DNOs are the organisations that look after the networks transporting electricity to end users such as homes and businesses. In England and Wales, DNOs manage the network from 132,000 down to 230 volts. In Scotland, DNOs manage the network from 33,000 volts to 230 volts. The UK distribution network is divided into 14 distribution areas, and these are managed by 6 DNOs.

## Distribution System Operator (DSO)

The DSOs role will be to maintain system security and quality of service in distribution networks in order to serve network customers. The DSO will help with market facilitation, encourage transparent and non-discriminatory access, and ensure security of system and quality of service.

## ED1

ED1 (Electricity Distribution) price control set the outputs that the 14 electricity Distribution Network Operators (DNOs) need to deliver for their consumers and the associated revenues they are allowed to collect for the eight-year period from 1 April 2015 to 31 March 2023.

## ED2

ED2 (Electricity Distribution) price control set the outputs that the 14 electricity Distribution Network Operators (DNOs) need to deliver for their consumers and the associated revenues they are allowed to collect for the five-year period from 1 April 2023 to 31 March 2028.

## ESQCR (Electrical Safety, Quality and Continuity Regulations)

Duty holders have duties to report certain incidents that may involve the safety of those not employed by the duty holder (enforcement by HSE), major supply interruptions (enforced by Department of Energy and Climate Change) and domestic fatalities (enforced by Department for Business, Innovation and Skills).

## Exceptional Event (Often referred to as a Severe Weather Event or Significant Event)

An event where the number of incidents caused by the event at distribution higher voltage in that period is equal to or greater than the commencement threshold number. In SPD the threshold is 76 and in SPM the threshold is 68. 'Distribution Higher Voltage' means any nominal voltage of more than 1,000 volts up to and including 132 kilovolts (except in Scotland, where it means any nominal voltage of more than 1,000 volts but less than 132 kilovolts).

## Fluvial Flood

Flooding that occurs as a result of flooding from rivers and watercourses.

## Guaranteed Standards of Performance (GSOPs)

These are the minimum levels of service to be met across a range of customer facing activities, including how we manage power cuts, connections, and customer complaints. If we fail to provide the level of service required, we make a payment to the customer affected. There can be certain exemptions to these compensation payments, for example during extreme weather events.

## Health and Safety Executive (HSE)

The government body responsible for enforcing health and safety legislation.

## Incentive on Connections Engagement (ICE)

This is an incentive designed to encourage DNOs to improve the way they communicate with major connections customers.

## Low-carbon Technology (LCT)

Technologies designed to reduce the amount of carbon we use, including electric vehicles, heat pumps, wind turbines and solar panels.

## Lower Layer Super Output Area (LSOA)

Is a means of reporting deprivation by the Office for National Statistics.

## National Parks

Means the areas that are designated as protected areas as defined in the National Parks and Access to the Countryside Act 1949.

## National Scenic Areas

Means the areas that are defined in the Town and Country Planning (Scotland) Act 1997 as being of outstanding scenic value in a national context.

## Network Analysis & View (NAVI)

Tool which facilitates detailed scenario analysis and modelling in ED2.

## Network Controlable Points (NCP)

Plant and apparatus that has automation fitted to carry out operations on the network remotely. This remote switching reduces the need for field engineers onsite and allows quicker restoration of customers during fault operations. It also enables the ability to apply schemes to specific circuits which can restore customers based on alarms and indications without human input, making our network smarter and safer.

# Glossary

## Network Operating Costs

Expenditure on operating and maintaining the network, e.g., fault repair, tree cutting, inspection and maintenance, engineering, and business support costs.

## Priority Service Register (PSR)

Our register of vulnerable customers, enabling us to provide additional support when required. Stakeholder Engagement and Consumer Vulnerability (SECV) Incentive Drives network companies to engage with stakeholders and address consumer vulnerability issues. The SECV Incentive is designed to only reward network companies for high quality activities or outcomes that go beyond business as usual. Network company provide a submission to the regulator in relation to engagement activities carried out during the regulatory year in question. The regulator will assess this submission in three stages (internal assessments, panel assessment and an external consultant assessment for the consumer vulnerability)

## REGO

Renewable Energy Guarantees of Origin (REGOs) certificates allow electricity suppliers to demonstrate to their customers how much of the electricity they supply was produced from renewable sources.

## Smart Meter

Advanced gas and electricity metering technology that offers customers more information about, and control over, their energy use (such as providing information on total energy consumption in terms of value, not only volume), and/or allows automated and remote measurement.

## Time to Connect and Time to Quote

This new incentive will measure the time taken from initial application received to the issue of a quotation and the time taken from quotation acceptance to connection completion. The incentive will capture minor connections customers. No exemptions apply.

## Unrestricted Domestic Tariff

The estimated annual cost of distribution to the typical domestic customer under the Common Distribution Charging Methodology, assuming a certain level of consumption for the chosen customer category and the total allowed income that is being targeted (reflecting previous under/over recoveries and various incentives).



