UK Power Networks
Delivering your electricity

# Meeting the challenge...

## at the heart of the energy transition

Annual Review 2021/22

# We are the UK's biggest electricity distributor, ensuring that the electricity infrastructure is in place to...

**...deliver power to**

**8.4m**

homes and businesses

**...keep the lights on across**

**29,250km²**

**...support and serve**

**19m**

people from Cromer in the east to Brighton on the South Coast

**UK Power Networks in numbers**

We operate across three licence areas: London, the South East and East of England. We also deliver networks through our unregulated business, UK Power Networks Services.

**13,150 MW**

Peak demand

**9.82 GW**

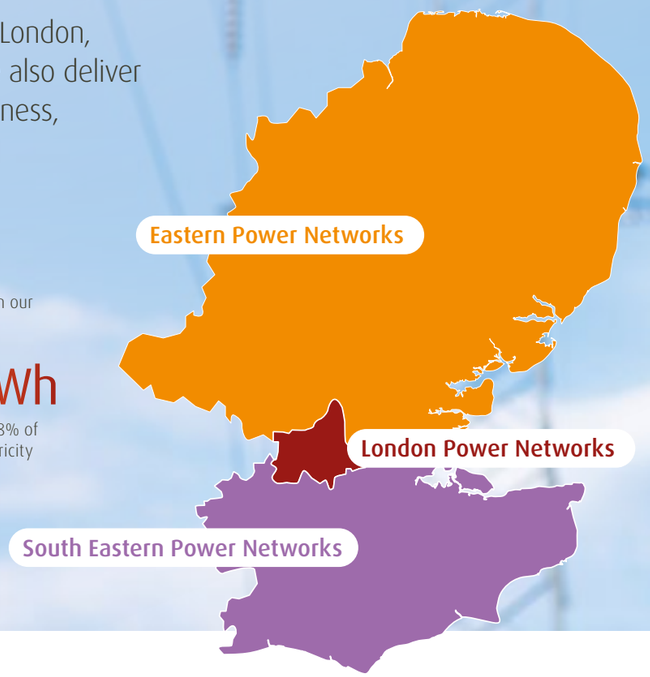
Distributed generation on our network

**189,822 km**

Total length of overhead (45,437 km) and underground (144,385 km) network

**73,746 GWh**

Electricity distributed – 28% of Great Britain's total electricity distribution




## The energy challenge...

Decarbonisation is one of the greatest challenges facing our generation. We are in the midst of a rapid shift in technology, society and energy. Our business, together with the wider energy system and society at large, will need to undergo significant changes over the next decade if Net Zero is to be achieved by 2050.

This UK Power Networks Annual Review covers the regulatory year: 1 April 2021 to 31 March 2022

## In this report

At the heart of the energy transition

# We are focused on delivering on our responsibilities...

In addition to keeping the lights on safely and sustainably, we are responsible for caring for our customers in the most vulnerable circumstances across our communities. That means we are continuously balancing the sometimes competing demands of value for money, the need to innovate, efficiency, safety and the overall resilience of our network.


**We make the safety of our employees, contractors and the public our number one priority.**

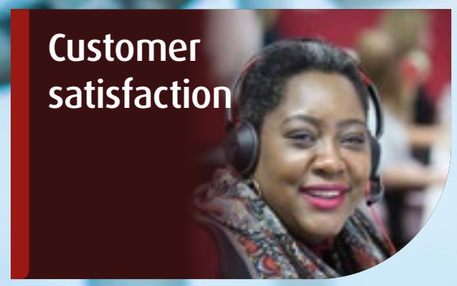
**Why this is important:** We want UK Power Networks to provide a working environment where no one suffers injury or illness because of our actions or inactions.

**Read more on page 28**


**We maintain electricity cables and lines across London, the South East and East of England and make sure power flows reliably, safely, and securely.**

**Why this is important:** Reliable access to electricity is becoming ever-more crucial, as we decarbonise transport and heating systems, for example switching to electric vehicles and heat pumps.

**Read more on page 30**




**We continue to improve existing services to meet customers' evolving needs.**

**Why this is important:** We want to ensure that our customers have the best possible service from us. We are always on the lookout for ways to improve what we do and how we do it.

**Read more on page 32**


**We deliver the lowest possible bills by driving efficiency and innovation in everything we do.**

**Why this is important:** We provide an essential service, so we take every opportunity to maximise value for our customers, and keep our part of the bill low.

**Read more on page 34**





# ...and clear about our role in meeting the challenge

We are a leading infrastructure provider, helping to build a smarter, more dynamic electricity network fit for a Net Zero carbon future while we deliver power to 19 million customers. We're actively working with industry and policymakers to facilitate the change. We are also connecting ever-greater volumes of low carbon generation at an unprecedented pace while other sectors – like transport and domestic heating – are decarbonising through electrification. Our whole systems approach places collaboration at the heart of what we do so we can deliver benefits to society and support the Net Zero transition.

**Read more about how we're facilitating the transition to a Net Zero carbon future on page 04**

At the heart of the energy transition

# How we're facilitating the transition to a Net Zero carbon future

Facilitating the UK's Net Zero carbon emissions target is central to our business plan. As more and more major industries are switching from fossil fuels to electricity, we are at the heart of the change by providing the infrastructure to help these industries facilitate change.

To fast track this process, we are creating an independent Distribution System Operator (DSO), whose key role will be balancing an increasingly complex, interconnected, and low carbon electricity network while maintaining focus on our core responsibility of keeping the lights on.

"As an electricity network operator, we are at the heart of enabling Net Zero because of our crucial role both in connecting renewable energy and facilitating the uptake of new low carbon technologies."

**Basil Scarsella**
Chief Executive Officer

## Our future network priorities

- Facilitate cheaper and quicker connections using proven innovation
- Collaborate with industry and others in Great Britain to enable nationwide benefits
- Facilitate the uptake of Low Carbon Technologies (LCTs), such as electric vehicles (EVs) and heat pumps
- Create Distribution System Operator capabilities
- Use customer flexibility as an alternative to network upgrades





## Where we are making a difference

## Renewable energy

### Connecting large-scale volumes of renewable energy

Generating electricity is a major source of emissions, but in the last 10 years we've been on a remarkable journey to connect unprecedented volumes of renewable energy like solar and wind.

**Our role**

- Make sure that the network is optimised to connect renewable energy sources
- Continually innovate to find new technology and methodology

**The benefits that this is creating**

- Our Distributed Energy Resource Management System (DERMS) is delivering a step-change in the increased adoption of renewable energy while saving millions of pounds for our customers
- We have currently connected 7.2GW of renewable energy to our network. That is enough to power 3.4m homes

**The future**

8.7 GW

renewable energy connections by 2030, enough to power 4.4m homes

## Electric vehicles

### Preparing the network for EV uptake

Transport accounts for 28% of total emissions in the UK. Driving an EV produces no carbon emissions and the electricity used to charge EVs can be supplied by renewable sources. The network must be ready for an unprecedented large-scale shift to electric transport.

**Our role**

- Enhance a network that is prepared for increased EV uptake through the use of smart solutions and strategic investment
- Work with other organisations such as local authorities to make sure everyone is able to access the infrastructure to benefit from the use of EVs

**The benefits that this is creating**

- Commercial and domestic customers can apply for LCT installations in minutes, rather than 10 days
- In 2022 we began a programme to deliver over 500 on-street EV chargers across Kent
- Positive progress of our £66m Green Recovery programme, providing charging capacity at key motorway service areas and Transport for London bus garages in our area of operation. On completion this programme will provide approximately 150MVA of capacity across more than 80 sites

**The future**

Over 3.6 million

EVs to connect to our network by 2030

## Heat decarbonisation

### Facilitating heat decarbonisation

We have an established role in enabling renewable energy and EVs.

Decarbonising heat is our newest area of focus. It is a major challenge because of its complexity and because the UK's future policy direction is still under development.

In March 2020, we were the first UK network operator to release a standalone Heat Strategy.

**Our role**

- Educate and inform customers about decarbonising heating
- Provide equal access to the services and infrastructure required for decarbonised heating, so no one is excluded from being able to take advantage of this new technology

**The benefits that this is creating**

- Our customers have much better understanding of the mechanics and benefits of heat pumps, thanks to the information packs we produced, called Heat Packs. These have been viewed almost 10,000 times
- We developed a blueprint for off-gas grid communities to decarbonise heating

**The future**

242,000

off-gas grid customers

provided with the required network capacity to allow them to switch to low carbon heating by 2028

At the heart of the energy transition

# A message from our CEO

2021/22 was another excellent year for UK Power Networks. We delivered our best ever network reliability performance and maintained our industry-leading position on both Customer Service and Stakeholder Engagement. I am also pleased to report that our safety performance has equalled our best ever, reflecting the increased focus we placed on this area this year.

**Basil Scarsella**
Chief Executive Officer, UK Power Networks

While COVID-19 continued to affect our operations this year, our approach to organisational resilience, coupled with all we have learned over the last two years, has ensured that we continued to deliver excellent service to our customers. Our organisational resilience was, however, tested again this year by the three significant winter storms, Dudley, Eunice and Franklin. Storm Eunice, which precipitated the Met Office's first ever red weather warning for the South East of England, caused substantial damage to our network. I am extremely proud of how the whole organisation responded to this challenging event.

## Facilitating the Net Zero transition

UK Power Networks is playing a leading role in helping our customers transition to Net Zero. This year there have been significant government policy announcements, such as the Net Zero Strategy and Electric Vehicle (EV) Infrastructure Strategy, which are helping to accelerate this transition. We believe that in order for customers to adopt new technologies, such as EVs, the process needs to be hassle-free. Our role is to ensure that there is sufficient network capacity to enable people to charge their EVs. We expect that by 2030 there will be over 3.6 million EVs needing to charge from our network. That's why we have developed a digital self-service facility for customers seeking an upgrade to their electricity supply when they purchase an EV or any other low carbon technology. This service reduces the application time from 10 days to a matter of minutes for our customers and we are pleased that it has received very positive feedback from both EV owners and EV charge point installers.

We are acutely aware that every pound we spend has an impact on our customers' bills. This is even more relevant in today's cost of living crisis. That is why we are always focusing on delivering the service that our customers want at the lowest cost possible. We are always looking for innovative solutions to help us deliver this outcome. In particular, we are increasing our use of commercial options to provide network capacity. We understand that as we electrify both heat and transport, more network capacity will be needed. The answer is not, however, simply to build a bigger network. Rather, we need to create a smarter network. This means that we can help our customers and communities to transition to a Net Zero world while keeping bills as low as possible. This is in all our interests.

## Safety – Our number one priority

A company can only claim to be high-performing if it also has an exemplary safety record. This year, two of our contractors sustained Lost Time Injuries (LTIs). In other words, two people had to take time off work because of injuries at work. Despite this representing our best ever safety performance we are striving to create a workplace environment where no one gets hurt. Our performance is a significant improvement on the five LTIs sustained in the previous year. We are particularly pleased that it is now over 700 days since a UK Power Networks employee or contractor had an LTI. We know that two LTIs remains too many. We are continuing to focus on guarding against complacency as we aim to achieve an injury-free workplace.

## A great place to work

Our people make UK Power Networks the great company that it is. That is why we are continually working to make it a place where the best people want to work. It is our eighth consecutive year on the **Best Big Companies to Work For** list and once again we have moved up the rankings. We are now at number two on the main list, and we ranked first as **Best Big Company to Work For in London**. Despite this success we realise we cannot stand still and we are doing more than ever to attract new employees from as diverse a range of backgrounds as possible.

It is the commitment of our people to deliver excellent service to our customers that delivers the industry-leading performance that you can read about in this Annual Review. I am grateful to everyone working at UK Power Networks for all that they have done and continue to do.

**Basil Scarsella**
Chief Executive Officer

## Clear strategic direction

In any business, **clear direction is key to success**. The direction and the decisions we take as a company are guided by...

**...our vision**, to be consistently the best performing Distribution Network and Distribution System Operator in the UK.

The **three aspects of our vision** are to...

- ...be an employer of choice
- ...be a respected and trusted corporate citizen
- ...be sustainably cost-efficient

We will achieve our vision by **delivering our business targets** and, where appropriate, setting targets which go beyond our sector.

Our performance is **enabled by our business model**, underpinned by strong governance, leadership and our values.

**Read more on page 08**

**Sustainability is embedded throughout our business.** Our ambition is to be the most environmentally and socially responsible Distribution Network Operator (DNO)...

**Read more on page 12**

...and deliver **value for our shareholders and wider stakeholders**.

At the heart of the energy transition

# How we create benefits and value for all our stakeholders

## How we're different

### A safe, reliable, resilient network
Our records for safety and reliability are second to none. We take long-term strategic steps to ensure the resiliency of our network and are the only British DNO to be assessed by the UK National Authority for Resilience and Crisis Management. We scored the highest outcome (five) in two out of the five categories, and received the second highest (four) for the remainder.

### A revolutionary approach
Uniquely among British DNOs, we are creating an independent Distribution System Operator (DSO) within UK Power Networks to look at cost-effective ways of providing additional network capacity. Ofgem has indicated that it is considering using our approach as a model for the future of power distribution across the country.

### Always innovating
Innovation is in our DNA and is evident in all parts of our business. Cutting edge technology is where most of our innovations are generated, but we also look for new approaches in the less technologically-driven aspects of what we do. We challenge the status quo wherever we can and look for new ways of working, such as fresh approaches to customer communications and stakeholder engagement.

### Transparent and accountable
As a monopoly provider of an essential service, we want to make it as easy as it can be for anyone to find out information about us. We welcome scrutiny and do all we can to encourage it, publishing information about our finances, the incentives we receive and the way we manage our business.

### Customers at the heart of our business
Our business takes every opportunity to see the world from our customers' point of view. This year, once again, Ofgem ranked us Number One DNO for customer satisfaction, and the Institute of Customer Services ranked us fourth best customer service provider across all companies in the UK.

### Value for customers' money
We never forget that our customers cannot choose their electricity distributor, so we take our responsibility to provide them with the best possible value for money. We are always on the lookout for ways to save our customers money. UK Power Networks' annual domestic charges are 7% lower than the industry average.

## What we do

We own and maintain electricity cables and lines across London, the South East and East of England and make sure power flows reliably, safely, and securely.

Our priorities are to tackle the climate crisis by enabling the connection of renewable energy, EV chargers and LCTs, to meet our customers' evolving needs by improving our services, to support our customers in vulnerable circumstances and to go above and beyond for the communities we serve.

### Eastern Power Networks


We deliver power to the East of England region which extends from the Wash in the east, to North London and the Thames estuary, encompassing a diverse range of urban and rural areas as well as a huge coastline.

### London Power Networks


We look after the electricity network for people who live and work in Inner London, including the responsibility for delivering power to iconic buildings and businesses as well as high-profile international events throughout the year.

### South Eastern Power Networks


We serve South London, Kent, East Sussex and parts of Surrey and West Sussex, covering a rich variety of customers and locations.

UK Power Networks Services
The power to deliver a better future

UK Power Networks Services is the commercial arm of UK Power Networks that manages private energy networks and delivers major national power infrastructure projects for customers on a competitive, commercial basis.

## We deliver high performance underpinned by our values

- **Integrity**
- **Respect**
- **Continuous improvement**
- **Responsibility**
- **Diversity and inclusiveness**
- **Unity**





## How we're delivering long-term benefits and value

### Safety and reliability

**Zero**
No electricity-related injuries to public due to our actions in the last five years

**99.99%**
Network reliability

### Customer satisfaction

**No.1**
Awarded the best performer in Ofgem's Broad Measure of Customer Satisfaction with our best ever customer satisfaction score of 93%

**Ranked 4th**
in a January 2022 survey of best customer service providers by the Institute of Customer Service (ICS), across all UK industries

### Value for money and Innovation

**Lowest cost**
DNO across RIIO-ED1 to date (2015/16 – 2021/22). This means our customers pay 7% less than the industry average

**£330m**
of customer savings due to innovation over the last seven years (2015/16 – 2021/22)

### Social responsibility

**2.1m**
customers on the Priority Services Register

**93.7%**
satisfaction score among customers on the Priority Services Register

### Environment

**1st DNO**
to have all Scope 1, 2 and 3 emission targets verified by Science Based Target initiative

**31%**
reduction in our Business Carbon Footprint since our baseline year of 2014/15

### Stakeholder engagement

**1st DNO**
Ranked 1st for stakeholder engagement and consumer vulnerability for third year in a row

**1,716**
front-line energy advisers trained to provide ongoing advice and support

At the heart of the energy transition

# Engaging regularly with our stakeholders is fundamental to the way we do business

Our customers are facing unprecedented challenges affecting their relationship with energy now and in the future. Engagement helps us better understand how these pressures are affecting customers and changing their expectations of us, our role and the services we provide. We engage with a wide range of stakeholders, from local authorities to low carbon technology installers, as well as partners and employees, to understand the key issues and shape actions that deliver the best outcomes for our customers and communities.

**15,735 customers**

received in-depth personalised fuel poverty support, a 14% increase over last year

**897,870 customers**

reached with general fuel poverty advice, a 7% increase over last year

**UK Power Networks Annual Review** 2021/22

### Engaging to support our customers during the cost-of-living crisis

Rising energy bills, driven by unprecedented wholesale fuel prices, are putting additional pressure on the rising cost of living. Our engagement guides us to take actions that will make a lasting difference for customers. This year we have expanded our fuel poverty programme, with more partners than ever before awarded funding to deliver practical support to more customers.

We take a threefold approach. First, we provide general fuel poverty advice to a wide range of customers. Second, we provide individual customers with in-depth, personalised, practical support through our community partners. Third, we support partners to train energy champions and advisers to provide ongoing advice and support in their communities. All of this is underpinned by strong partnerships with local trusted organisations, and guided by data, feedback and learnings to prioritise and tailor our actions. Given the scale of the challenge, we recognise that we cannot solve fuel poverty alone, so we are also collaborating with cross-sector partners across our regions to coordinate our efforts to make the greatest impact we can.

## Our key stakeholders

### Partners

**How we engage**

- Stakeholder panels and councils to provide insight into strategic issues
- Forums and workshops
- Collaboration to design and deliver initiatives
- Training and upskilling

**Key outcomes of engagement**

- First DNO to support another DNO with call handling during Storm Arwen; collaborated with British Red Cross to proactively contact customers in vulnerable circumstances
- Reduced street works disruption through cross-sector collaboration and shared our leading practice nationally
- First DNO to implement automated, two-way PSR data-sharing with water companies in our regions, so customers only need to register once to receive support
- Collaborated with water companies in our regions to mitigate the impact of outages on local water supply

**189 active partners**

for consumer vulnerability

### Communities

**How we engage**

- Local authorities: workshops, training and information sharing
- Regular contact with politicians
- Community events
- Discussions with community energy groups
- Involvement in trials
- Indirectly via organisations representing community interests

**Key outcomes of engagement**

- Practical framework developed to support local authorities in their local area energy planning
- Blueprint developed for off-gas grid communities to decarbonise their heating at lowest cost
- Co-developed accessible charging infrastructure standards published by the British Standards Institution

**242,000 customers**

in off-gas grid communities could benefit from our coordinated approach to decarbonise heating

### Customers

**How we engage**

- Customer research
- Feedback on customer experience
- Citizens' Panel – representative group of customers from across our regions
- Inclusive customer panel and Small and Medium Enterprise (SME) online panel
- Involvement in trials
- Targeted campaigns, e.g. to register for priority services

**Key outcomes of engagement**

- Improved customer satisfaction with accuracy of information provided during power cuts
- 96% (top DNO) customer satisfaction score for installation of upgraded fuses required for EVs
- Shortened the end-to-end process for a fuse upgrade by up to 10 days
- Reduced the time for fleet managers to assess electrification options from 25 days to under four hours, when using our self-serve Site Planning Tool
- 2.1m customers registered for Priority Services
- 93.7% PSR customer satisfaction

**Ranked 4th**

in a January 2022 survey of best customer service providers by the Institute of Customer Service (ICS), across all UK industries

### Colleagues


**How we engage**

- Engagement surveys
- Fortnightly CEO video updates to staff
- Internal publications including magazines, podcasts, newsletters and campaigns
- Ongoing training and development
- CEO Staff forums

**Key outcomes of engagement**

- High scores in employee engagement
- Ranked in the top ten in both Best Companies to Work For and Inclusive Companies
- An engaged, informed workforce
- Breaking down barriers across departments within the company
- Retained our Platinum status with Investors in People

**Ranked 2nd**

in the UK's Best Big Companies to Work For

Sustainability

# Towards a more sustainable future

At UK Power Networks, we are building a business that is economically, environmentally and socially sustainable. Our vision includes the ambition to be the most socially and environmentally responsible DNO, and these strategic imperatives drive our direction. We are keenly aware of our responsibility as the supplier of a monopoly service and this awareness helps to guide our decision-making.

**Suleman Alli**
Director of Strategy and Customer Services

Our approach to sustainability has five main strands:

- Managing our own environmental footprint
- Supporting society in its journey towards a Net Zero economy
- Promoting and protecting biodiversity
- Ensuring equal opportunities to benefit from the transition to Net Zero
- Taking particular care of those customers in fuel poverty or with other needs

## Social purpose

Given the scale of the effort needed to support the transition to Net Zero, we know we must redouble our efforts in this regard. Consumer participation through network flexibility and demand side management will be critical to delivering Net Zero in a smart way and at lowest cost. Participation will not come about without consumer trust. We need to place increasing importance on the social purpose of our company, especially given how important trust, fairness and transparency are in achieving our strategy and maintaining public support for Net Zero.

In the coming years, we will:

- Report annually on the achievement of our social purpose commitments.
- Update the organisation's Articles of Association to embed an explicit public interest commitment.
- Enhance the remuneration policy of our leadership and employees to link rewards to specific customer and environmental targets.
- Continue to monitor and improve our strategy by continuing to engage with customers and stakeholders, including through our Citizens' Assemblies.
- Establish a social fund (The UK Power Networks Foundation), with contributions by both the shareholders and employees, to advance good causes in the communities that we serve.

## Learning from best practice

Our approach to social sustainability draws on research into best practice. In summary, the best practice analysis provides clear ideas on common features of trusted and responsible companies. These include:

- To "walk the talk" – The Board must embed a purpose-led business model by being accountable to every employee for the full impact of company operations and work with stakeholders to deliver sustainable positive change in society.
- Promote "collaboration and partnership" – Ensuring the supply chain is aligned with social purpose by adopting a values-driven culture with measurable targets, including environmental goals.
- Embed "fairness in operation" – Aligning the remuneration policy to a wider societal interest, supporting those whose circumstances make them vulnerable, as well as treating employees with respect.
- Undertake "ongoing engagement with stakeholders and customers" – Understanding their long-term needs and including their involvement in the complex trade-offs and choices that will be a feature of achieving Net Zero.

## Reducing our climate impact

We have set an ambition to be the most socially and environmentally responsible DNO in our sector and we are committed to taking a leading role in limiting irreversible change to our climate. We take this challenge very seriously and will apply the same performance-focused mindset to our environmental impact as we do to every other part of our business. Our areas of focus will be:

- Decarbonisation in line with our verified Science Based Target (SBT)
- Reducing our impact on the world's limited resources
- Increasing natural biodiversity
- Reducing pollution produced by our business operations and network activity

**Suleman Alli**
Director of Strategy and Customer Services





## Our key focus areas

### Environment

**Read more on page 14**

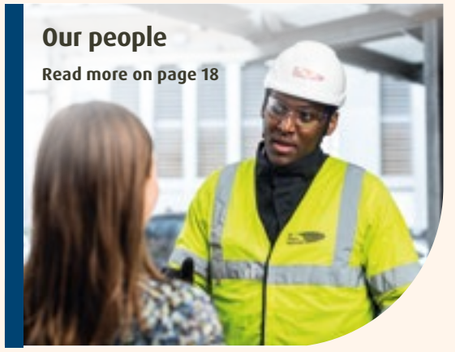
**31%**
reduction in our Business Carbon Footprint since our base line year of 2014/15

**1st DNO**
to achieve Science Based Target initiative verification

**What we are doing**
- Supporting the growth in sources of renewable energy
- Managing our own operational carbon footprint
- Protecting, restoring and promoting biodiversity
- Implementing a rigorous approach to the prevention and management of waste

### Our people

**Read more on page 18**



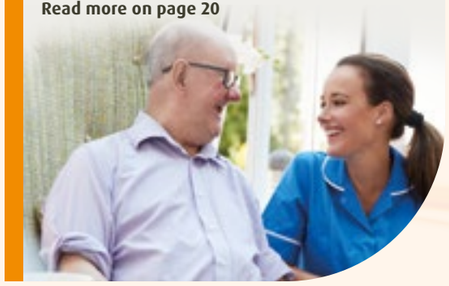
**2nd**
Ranked 2nd place in the UK's Best Big Companies to Work For

**Platinum status**
Retained our Platinum status with Investors in People

**What we are doing**
- Building a diverse and inclusive business
- Developing our future leaders
- Working hard to keep our people safe and well
- Providing career progression and training opportunities

### Social responsibility

**Read more on page 20**



**2.1m**
customers registered on the Priority Services Register

**3,381**
customers received free help on energy and water savings through Scope Disability Energy Services and UK Power Networks' Energy Advice Line

**What we are doing**
- Understanding and addressing all types of vulnerability that affect our customers
- Tackling fuel poverty
- Ensuring no one is left behind in the journey towards Net Zero
- Being transparent and open to scrutiny

Sustainability

# Environment

UK Power Networks has a pivotal role to play in the decarbonisation of power, heat and transport. As an electricity distributor we need to ensure our network is able to respond to the growth in renewables, heat pumps and EV charging infrastructure. Our business plan for the next five years outlines how we will achieve this.

## 2021/22 Highlights

**31%**
reduction in our $CO_2$ emissions since our baseline year 2014/15, surpassing initial target of 2% each year

**1st DNO**
to have all Scope 1, 2 and 3 emission targets verified by Science Based Target initiative

**88%**
of our waste was diverted from landfill in 2021/22

**99%**
of our street works spoil was recycled in 2021/22

## Targets

- Reduce carbon emissions across Scopes 1, 2 and 3 by 25% by 2028/29 against a 2018/19 baseline in line with a Well Below 2 degree Science Based Target.
- Reduce NOx emissions by 33% over the RIIO-ED2 period[1] compared to the beginning of the period, improving air quality for our customers.
- Recycle 80% of office, depot and network waste and 99% of street works material by the end of RIIO-ED2, with no recoverable waste to landfill by 2025.
- Increase the biodiversity of new major substation developments by a net-gain of 10-20% and target a net gain of 30% at 100 existing sites.
- Reduce packaging and transportation across our supply chains and work towards a circular economy approach across our procurement.

1 RIIO-ED2 covers the five year price control period from April 2023 till March 2028





How we address our own operational environmental impacts and carbon footprint is just as important as how we facilitate renewables for society at large. Our plan addresses the actions we aim to take to decarbonise our fleet of road vehicles, temporary generators, buildings, depots and substations. But it is not all just about carbon. We also aim to address resource use, pollution and biodiversity. These concerns go hand in hand with each other, for example, reducing carbon from our fleet means burning less diesel, which also helps improve air quality.

Our Environmental Strategy is built around four key pillars as follows:

- Decarbonisation in line with our verified Science Based Target (SBT)
- Reducing our impact on the world's limited resources
- Increasing biodiversity
- Reducing pollution produced by our business operations and network activity.

### Wildlife can thrive around substations

Electricity substations are only accessible to trained electricity workers and this makes them relatively protected, undisturbed places where wildlife can thrive. Our volunteers take advantage of this and, for example, in 2021/22 an eight-strong team of UK Power Networks volunteers planted 25 saplings and raked 100 square metres of grassland surrounding an electricity substation just off the A1016 in Essex, before sowing wildflower seeds. The seed mix included Yellow Rattle, a semi-parasitic plant that will help to suppress the coarser grasses and allow a greater variety of wildflowers to thrive.

A pond at one of our grid substations, which was restored in 2021, was re-surveyed by Suffolk Wildlife Trust to assess its suitability for Great Crested Newts. It scored well on all measures including water quality, as evidenced by the presence of great diving beetles. Smooth newts and various invertebrates were also seen sheltering among plants that had started to recolonise the pond.

In another initiative, near Reigate, volunteering employees removed invasive, non-native species, including Himalayan balsam, from the land surrounding a substation. They also started to develop a wildflower meadow, built a refuge for small mammals and competed to make the best birdbox to install on site.

### Addressing noise pollution

We are also engaging with professional stakeholders to prevent noise issues on much-needed future housing developments. Local authorities have completed assessments to identify whether there is a deliverable supply of land for five years' worth of housing. We have mapped these sites against our substations and created noise contours around these to identify areas where low frequency noise could be an issue. We have very few noise complaints but where we can see development close to our sites there is the possibility of those dwellings being affected. In these cases, the 'agent of change' (namely the housing developer) is responsible for ensuring that appropriate mitigation is included in the development. We are proactively engaging with environmental health and planning officers in this to ensure that the planning consents include requirements for the 'agent of change' to implement suitable mitigations. To this end we have run seven webinars with local authorities to raise awareness about low frequency noise, the right mitigation methods, what works and what doesn't, and what is needed in the planning consents. To date these have been very well received with over 200 attendees, representing 84 councils, and approximately 90 participants at a presentation to the Institute of Acoustics. Further engagement events are being planned.

### Helping local authorities avoid noise pollution

Following a webinar with a local authority in our area, an environmental health officer contacted us about a development that was in planning stage. Together, we worked on suitable controls so that future residents are protected from potential noise by ensuring the 'agent of change', i.e. the developer, funds the mitigation, rather than our customers.

**"I think that this will be a very useful resource for both local authorities and developers alike. UK Power Networks is providing support through information and webinar sessions which are particularly useful and I have personally found very interesting."**

**Rebecca Brooks**
Environmental Health Officer at East Suffolk Council

Sustainability

# **Environment** continued

### Sustainable procurement

UK Power Networks has a large supply chain, and in common with most organisations this represents a significant part of our carbon emissions. Although we do not have direct control of these Scope 3 emissions, we do have influence. For this reason, we have made a commitment in our business plan to reduce emissions from our supply chain by 25% by 2028 from a 2018/19 baseline.

Our analysis and screening of these emissions has shown us where the carbon hotspots are, which is primarily in the goods, services and the capital goods we buy. As an infrastructure provider, concrete, transformers, cables and contracted out construction/maintenance services are, inevitably, significant sources of our Scope 3 emissions.

More importantly, we have identified those suppliers that are material to our Scope 3 emissions. Of the more than a thousand suppliers we have, fewer than 100 account for 80% of our emissions, with 30 responsible for approximately 50%. This means we are now able to target our efforts and build good partnerships with these key suppliers where it matters most.

### Operational footprint – Scopes 1 and 2

Our directly controlled emissions (our Business Carbon Footprint) come mainly from the burning of diesel in our road vehicle fleet and temporary generators, as well as from the energy we consume in our buildings, depots and substations.

The decarbonisation of our fleet and temporary generators is a significant challenge that has dual benefits of reducing carbon and improving air quality. For our fleet, we plan to start transitioning the cars and small vans to EVs and exploring the options for the larger specialist vehicles. For the temporary generators, we are looking at alternative fuels like Hydrotreated Vegetable Oil (HVO) and hybrid engines.

For the energy consumption at our sites we are implementing improved metering, monitoring and targeting, plus energy efficiencies projects, and we have committed to continue buying renewable energy for our sites.

Our Business Carbon Footprint in 2021/22 was 53,134 $tCO_2e$ which is a 31% reduction compared to 2014/15 levels, which is our baseline year.

With new, more ambitious carbon and environmental targets for our RIIO-ED2 Business plan which includes investment of £246.1m in the distribution network to achieve our overall environmental goals.

### Waste and the circular economy

We are working to develop a more circular economy approach to the prevention and management of waste. This will complement the efforts we make to reduce our Scope 3 carbon emissions, as any reduction in resource use will result in lower embodied carbon emissions.

In 2021/22, we diverted approximately 88% of our waste from landfill and we recycled 99.3% of our street works spoil. In addition, we have improved the reporting for all our waste streams to ensure we can target our efforts for our circular economy commitments.

To support this, we have committed to zero waste to landfill for all our recoverable waste, to recycle 80% of office, depot and network waste and to recover 99.5% of all street works waste by 2028.

### In-house training to raise awareness of reducing our own environmental impact

We were able to continue to train our employees in Environmental Awareness during COVID-19 by adapting the course for online presentation. The course covers how our business interacts with the environment, the importance of minimising negative impacts, and the processes we follow and resources we use to manage the risks. A total of 33 employees, including candidates from our engineering development programme, successfully completed the course.

## Tree cutting to attract wild birds such as nightingales

Tree cutting is vital to keep branches away from power lines and keep electricity supplies safe and reliable. In 2021/22 UK Power Networks worked with specialist tree surgeons and local conservationists in a village in Sussex to manage the wildlife habitat around power lines in a way that preserved and improved the area for wild birds. Following the advice of wildlife experts, we ensured that the vegetation was cut back in a way that attracts migrating birds, including nightingales, to the wildlife corridor along the 33,000-volt, 3km route of the power lines.

**"Either side of the power lines there are trees, bushes, scrub and banks which provide habitat for migrating birds. In April there is a lot of birdsong and the icing on the cake is the nightingale's song. The nightingale is quite a scarce bird now in Britain and the local population, mainly centred on the railway line where the power cables are, is one of the most important in Sussex. If the area was left it would turn into an impenetrable mass of scrub, not that valuable as a wildlife habitat. Once it grows up into dense vegetation there is no light for flowers, and it is unsuitable for a lot of birds. Every so often, clearing bits along the corridor benefits wildlife."**

**Simon Linington**
Barcombe Community Wildlife Group





## Our approach to climate change

UK Power Networks plays an important role in facilitating Net Zero for its customers and society at large as we move towards a low carbon economy. We do this by developing innovative ways of reshaping the electricity network so it can support the growth in renewables, low carbon generation, EV infrastructure charging and heat pumps, to name a few. We must also achieve Net Zero for our own operational footprint and have set stretching targets for this through the Science Based Target initiative. Climate change also affects our network, and we have developed a robust climate adaptation plan and are making good progress in its implementation, ensuring the network we manage remains resilient.

### Governance

**The governance around climate-related risks and opportunities**

As a regulated high-performing business, we manage our operations in a transparent way that enables rigorous scrutiny. In 2022 we formed an Environment, Social and Governance (ESG) Board sub-committee. We also launched our own green bonds, targeting investment in infrastructure improvement of our network that will help reduce carbon. These bonds require external scrutiny of our sustainability performance. These actions will provide additional oversight of our performance in this area and will help drive the ESG objectives as well as holding the company to account for any underperformance.

### Risk management

**The processes used to identify, assess, and manage climate-related risks**

UK Power Networks has a well-developed risk management approach that continually scans the horizon to identify potential risks and develops strategies and tactics to avert or manage those risks. The impact of climate change is one of the key risks facing our business. As a network operator, we must ensure we do nothing to inhibit the transition of the UK to a low carbon economy. Network operators must not block or impede this transition and need to take multifaceted actions to address this. Equally, we must manage and mitigate the worst impacts of climate change on our network. Our current climate adaptation plan has seen us improve the protection of our assets and substations from floods and our overhead lines from high winds. We have also implemented better processes and controls to ensure customer interruptions of supply are minimised and quickly resolved. Our recent performance this year in the face of significant storms demonstrates that we have made good progress in ensuring this is the case.

### Strategy

**The actual and potential impacts of climate-related risks and opportunities on the organisation's business, strategy, and financial planning**

Supporting the transition of the UK economy to becoming Net Zero for carbon emissions by 2050 requires a careful strategy that enables us to identify the risks and opportunities offered by this challenge. Our business plan for RIIO-ED2 has clear commitments to ensure we reduce our operational carbon footprint, support vulnerable customers, ensure the network enables the introduction of low carbon technology and is climate resilient. This will be achieved at the lowest cost possible, ensuring that communities and customers in vulnerable circumstances are not left behind or subject to disproportionate financial impacts.

### Metrics and targets

**The metrics and targets used to assess and manage relevant climate-related risks and opportunities**

We take an evidence-based approach to measuring and monitoring our contribution to averting climate change. As the first DNO to adopt Science Based Targets, including our supply chain emissions, we demonstrate our commitment to third-party scrutiny and transparency. This approach, combined with public reporting and the scrutiny of our newly formed Environment, Social and Governance Board sub-committee, will ensure that we are scrupulous in reporting our progress against targets.

Sustainability

# Our people

UK Power Networks is nothing without its people. We recruit and retain the best people in our business in order to provide a first-rate service to our customers.

## Accreditations

| | |
|---|---|
| INVESTORS IN PEOPLE We invest in people Platinum | UK Power Networks has retained its Platinum status – the highest level of accreditation held by fewer than 2% of IIP certified companies across 66 countries globally. |
| The Institute of Customer Service | UK Power Networks ranked 4th best customer service provider in the UK and was one of only three utilities in the top 50. |
| CIPS Chartered Institute of Procurement & Supply | UK Power Networks demonstrated exceptional procurement delivery, to confirm its position within an elite worldwide group that has gained the Chartered Institute of Procurement & Supply (CIPS) Corporate Certification advanced 'Platinum' award. |
| NES NATIONAL EQUALITY STANDARD | Leading standard in the UK of best practice on equality, diversity and inclusion. First DNO to be awarded the National Equality Standard. |
| INCLUSIVE COMPANIES | UK Power Networks is in the top 10 for the Inclusive Top 50 UK Employers and the only DNO to feature on the list. |

## 2021/22 Highlights

**2nd**

Ranked 2nd among the UK's Best Big Companies to Work For 2022 and 1st as the Best Big Company to Work For in London

**Employer of the Year**

Won the prestigious title of Employer of the Year at the Utility Week Awards

## Targets

- Measure ourselves against other companies and seek inter and intra sector recognition/accreditation by participating in external benchmarking such the UK's 25 Best Big Companies and the National Equality Standard accreditation.
- Reduce the Lost Time Recordable Injuries (LTRI) rate (accident rate per 100,000 hours worked) to less than 0.05.
- Achieve at least one year with no RIDDOR[1] reportable Lost Time Incidents for employees and contractors by the end of the RIIO-ED1 period.[2]

## Awards

### Employer of the Year

UK Power Networks won the title 'Employer of the Year' at the Utility Week Awards and was praised for the investment in employees, protecting their wellbeing and championing equality, diversity and inclusion.

### Better Society Awards

The innovative CommuniHeat project, a first-of-its-kind collaboration putting local people at the centre of climate action, has won the Environment Award and the Carbon Reduction Award at the Better Society Awards.

### Energy and Utilities Project of the Year

The Smart Grid Development team's DERMS won Energy and Utilities Project of the Year at the National Technology Awards 2022. The technology was praised for delivering a step-change in the increased adoption of renewable energy while saving millions of pounds for our customers.

### Engineering Company of the Year

UK Power Networks has won a top national industry award at the British Data Awards for its data-driven approach to enabling the transition to Net Zero.

1 RIDDOR – Reporting of Injuries, Diseases and Dangerous Occurrences Regulations.

2 RIIO-ED1 period covers the eight year price control period from April 2015 till March 2023.





We work hard to attract the best people, look after them properly, and train them so they can fulfil their potential. We want to make sure that they are proud to be part of UK Power Networks and choose to stay with us. It is part of our vision to be an employer of choice and that means taking good care of our people, making the company a place where people want to come to work. This year, UK Power Networks was ranked second in the Best Big Companies to Work For and we were top of the rankings as the Best Big Company to Work for in London.

### Developing future leaders

At UK Power Networks, we understand the importance of leadership. Our vision is to be the best performing Distribution Network Operator. By developing a strong, committed team across the business who all understand the importance of our vision we will continue to thrive and succeed.

Our Leadership Academy is at the heart of our people strategy. It is helping us to build a workforce that is rich in potential for future leadership, with a strong pipeline of home-grown leaders to continue to take us forward. This year we enrolled over 100 adult apprentices in the programme, which provides professional leadership qualifications from the Chartered Management Institute (CMI). These adult apprentices are existing UK Power Networks' employees who have put themselves forward and been accepted for this career progression. The programme includes study modules such as personal and professional development, managing budgets and finance, and managing teams. The most advanced of these courses, which is at Level 5, is a 28-month programme comprising a mix of off-the-job training, research and assignment writing, mentoring, and resources made available on our learning and development hub. At the moment, approximately one in six of our entire management team is enrolled in our Leadership Academy, which is unique in our industry.

### A diverse and inclusive company

UK Power Networks strives to be a great place to work as well as a respected and trusted corporate citizen. Both these priorities mean that we are committed to diversity and inclusion, meaning that we endeavour to recruit the widest range of people and to provide an environment in which everyone has the opportunity to thrive. In recent years, the company has established itself as a leader in this field. In 2018 we were the first DNO to achieve the National Equality Standard and we remain in the top ten of the Inclusive Top 50 UK companies.

We recognise that there is still a long way to go. In particular, ours is a strikingly male-dominated industry that will take many years to rebalance. We work with schools, showcasing role models and career paths to encourage girls and under-represented groups to set their sights on a future in science, technology, engineering or maths. And closer to home, we have established a mentoring programme called Women in Leadership, where senior women in the company mentor more junior women with advice on careers and other matters relevant to progressing. To further encourage diversity, we have hosted a number of virtual awareness events, such as the Black Colleagues and Allies Virtual Conference and Networking Event, at which we collaborated with organisations like the Association for Black and Ethnic Minority Engineers (AFBE-UK) and diversity specialists, such as The Equal Group. We also celebrated Black diversity and creative talent through spoken-word artists and a seminar on diversity in the Black community, exploring African and Caribbean culture and history.

### Urban Synergy

Urban Synergy is a mentoring charity that helps young people from backgrounds that are under-represented in the professional world to reach their full potential through a combination of focused mentoring programmes and inspirational seminars. UK Power Networks has been working with Urban Synergy since 2020 and we are a corporate adviser to the charity. We took on a cohort of interns aged between 17 and 20 years old. This was a paid internship and included two days of training and induction followed by four weeks' work experience, spending time with teams such as IT, engineering, innovation, marketing and employee engagement.

The internships were not specifically designed to lead to employment, as most of the interns are still in education, but it was a great success and everyone involved committed to repeating the exercise next year. Urban Synergy awarded the UK Power Networks person running the programme with the accolade of 'work experience champion' in recognition of its success. Next year we plan to double our intake to twelve 16-to-18-year-olds.

### Role model for a cool career in science

Rosie Watts, an Energy Analyst with UK Power Networks Services, was a Science, Technology, Engineering and Maths (STEM) ambassador as part of British Science Week in March 2022. As an analyst in the energy and technology consulting team, Rosie's role covers areas such as energy modelling, projects to install renewable energy, EV charging capability and electrification of heat.

Rosie had a female physics teacher at school who encouraged her to study chemical engineering, but at university the course was heavily male dominated. She wants to encourage young people, especially young women, to see STEM subjects as cool and the route to a career in the environmental field.

### Recruitment from the Armed Forces

UK Power Networks has a long and proud tradition of recruiting people as they leave the armed forces. We have noticed that the skills we are looking for – such as discipline, technical know-how, and teamwork – are often to be found in those leaving the armed forces. We continue to nurture our relationship with the Armed Forces Covenant, the organisation that works with people leaving service and helps them find the next chapter in their lives. Open days, barbecues and a range of presentations held at Aldershot are just some of the events we have held to encourage interest among ex-service personnel in working for us. We recruited four people through this route in 2021/22.

The Defence Employer Recognition Scheme (ERS), which encourages employers to support the armed forces community, has given UK Power Networks a Gold Award.

Sustainability

# Social responsibility

Being a respected and trusted corporate citizen is central to our ambition at UK Power Networks. We recognise the privilege it is to be the sole supplier of a vital service to over eight million homes; we understand that brings with it the responsibility to ensure that we act in the interests of the communities that we serve, particularly those customers whose circumstances may make them vulnerable.

## 2021/22 Highlights

**2.1m**
customers on the Priority Services Register

**93.7%**
satisfaction score among customers on the Priority Services Register

**3,381**
customers received free help on energy and water savings through Scope Disability Energy Services and UK Power Networks' Energy Advice Line

**£72,492**
estimated savings delivered to customers in the first year of Scope Disability Energy Services and UK Power Networks' Energy Advice Line operation

## Targets

- Maintain our community fund, investing over £300,000 per annum to prioritise working with partners to help people in fuel poverty.
- Create a group of UK Power Networks local community energy champions.
- Host two subject-specific priority issue focus groups on vulnerable customers and fuel poverty every year.
- Proactively contact all registered vulnerable customers to offer support if they are without power.

### Understanding the intersection of vulnerability factors

The landscape of vulnerability is becoming more complex. This is as a result of several factors such as the COVID-19 pandemic, the climate emergency, the current energy crisis, inflation and the cost-of-living crunch. These are all having an effect at the same time as customers are also experiencing changes thanks to the energy system moving towards Net Zero. At UK Power Networks we make it our business to do all we can to understand how these factors affect our customers and to mitigate them where we can. This year our understanding has advanced considerably as we have developed our appreciation of the level and impact of the intersection of these factors. For example, we have a better understanding of how different vulnerability indicators such as proficiency in English, long-term unemployment, not owning a home and mental illness overlap across our regions; this understanding allows us to provide support more effectively.

### Fuel poverty affects more people than ever

Even before the pandemic and the current cost of living crisis, we were aware that fuel poverty was rising across the country. Assessing fuel poverty is complex, so comprehensive up-to-date information is not always available. Nevertheless, we know that even before the pandemic and the energy crisis, approximately one in every eight people in our regions was in fuel poverty. We don't need to wait for the data to know that the situation is much more acute now.

Addressing fuel poverty is not just about supporting individuals. We also take a strategic approach, so that our investment has an enduring impact. This year we trained 1,716 people in the community, such as front-line workers, to be energy champions and advisers. By funding this training, we provide a lasting legacy from which the community continues to benefit long after the funding has ended.

### Tackling fuel poverty through collaboration

Fuel poverty is an urgent and potentially devastating challenge facing many of our customers. We recognise that we cannot solve this alone, so we are working hard to find strategic ways to join forces with others to make our collective efforts more effective. We have formed a coalition with regional organisations to support this common cause and develop an innovative cross-sector way of understanding affordability issues of our customers. In collaboration with gas networks, water companies, energy suppliers and local authorities, we are working hard to maximise the impact of our collective efforts for our shared customers. For example, at UK Power Networks, we have a particular expertise in data analytics and we have shared its benefits with our partners in order to target support more effectively. In the year under review, we participated in a Citizens Advice fuel poverty programme alongside Scottish and Southern Electricity Networks (SSEN), Southern Water and Southern Gas Network (SGN) that helped 145 individuals in West Sussex. We have scaled up our support so that in coming years we can provide assistance to seven times as many households in fuel poverty than we did in 2021/22.

### Collaboration is key

Sharing data with energy suppliers is an established practice in our business, but in 2021 we took collaboration a step further with a ground-breaking partnership with two water companies. We worked first with Thames Water to find a way to share data about our customers on the Priority Services Register (PSR) automatically and safely. We have now automatically shared over 30,000 PSR records with Thames Water and Essex and Suffolk Water. The remaining six companies will follow soon until we have linked up with all eight water companies in our area of operation.

Customers who register as needing extra help with one organisation will automatically also be registered with the other and so will receive support without having to register twice. This has already led to a significant increase in people registered for extra help from UK Power Networks in case of, for example, a power cut. A third of registrations shared by Thames Water with us so far are customers who would not have otherwise been on our radar, so thanks to this collaboration, thousands of customers are automatically getting the vital help they need.

### Help for private renters

We recognise, thanks in part to our stakeholder engagement, that private renters are at risk of being left behind in a 'two-tier' recovery, as they face mounting arrears and lower energy efficiency while being unable to make energy-saving changes such as insulation to their homes. We brought together two of our strategic partners operating in parts of London that are in need, Home Energy Efficiency Training (HEET) and the Seasonal Health Intervention Network (SHINE), to produce a booklet tailored to the needs of private renters. It is full of advice and guidance on what their rights are, how to deal with their landlord and where to go for more help and advice on energy efficiency and financial challenges. This could benefit over 6,000 private renters in our regions next year.

### Working with Scope

We have a long-standing strategic partnership with Scope, the disability equality charity for England and Wales. UK Power Networks is a founder member of the Scope Utilities Membership and this year we worked more closely than ever with Scope on a number of important projects. Scope helped us improve our understanding of the needs of disabled people in the context of our service delivery.

They delivered training to our employees, including many of the Executive Management Team, to raise our awareness and improve our understanding of disability. This included an appreciation of the social model of disability that recognises that disability stems from the barriers in people's way rather than being inherent. This shift in perspective helps us to focus on what barriers we need to remove so everyone can be equally empowered.

### Making EVs a reality for drivers with disability

In 2021/22, UK Power Networks worked closely with Motability to investigate the on-street EV charging needs of disabled customers, the impact on the network of electrifying on-street disabled parking spaces and the respective roles of local authorities and ourselves in supporting disabled customers to transition to EVs.

**"UK Power Networks' 'Enable' research project, supported by Motability, highlighted that DNOs can potentially play an important role in making sure that on-street EV charging in particular is accessible for disabled people. The coordination involved in providing accessible charging is incredibly complex and a shared responsibility and UK Power Networks has shown that DNOs can step up to the mark in leading and facilitating this change."**

**Catherine Marris**
Head of Innovation at Motability

UK Power Networks Annual Review 2021/22

Sustainability

# Our contribution to UN Sustainable Development Goals

- Ahead
- On track
- Not on track

## Sustainability areas

### Environment

### Our people

### Social responsibility

## Relevant UN Sustainable Development Goals (SDGs)

- 12 Responsible consumption and production — Ensure sustainable consumption and production patterns
- 13 Climate action — Take urgent action to combat climate change and its impacts
- 15 Life on land — Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss
- 3 Good health and well-being — Ensure healthy lives and promote well-being for all at all ages
- 5 Gender equality — Achieve gender equality and empower all women and girls
- 8 Decent work and economic growth — Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all
- 10 Reduced inequalities — Reduce inequality within and among countries
- 7 Affordable and clean energy — Ensure access to affordable, reliable, sustainable and modern energy for all
- 9 Industry, innovation and infrastructure — Build resilient infrastructure, promote inclusive and sustainable industrialisation and foster innovation
- 11 Sustainable cities and communities — Make cities and human settlements inclusive, safe, resilient and sustainable
- 17 Partnerships for the goals — Strengthen the means of implementation and revitalise the global partnership for sustainable development

| Commitments | Status |
|---|---|
| Reduce carbon emissions across Scopes 1, 2 and 3 by 25% by 2028/29 against a 2018/19 baseline in line with a Well Below 2 degree Science Based Target. | ● |
| Work towards reducing nitrogen oxides (NOx) emissions from our fleet and generators by 33% over the RIIO-ED2 period compared to the beginning of the period, improving air quality for our customers. | ● |
| Recycle 80% of office, depot and network waste and 99.5% of street works material by the end of RIIO-ED2, with no recoverable waste to landfill by 2025. | ● |
| Increase the biodiversity of new major substation developments by a net-gain of 10-20% and target a net-gain of 30% at 100 existing sites. | ● |
| Reduce packaging and transportation across our supply chains. We are working toward a circular economy approach across our procurement. | ● |
| UK Power Networks commits to only buying renewable electricity for its offices and sites. | ● |
| Reduce the Lost Time Recordable Injuries (LTRI) rate (accident rate per 100,000 hours worked) to less than 0.05. | ● |
| Achieve at least one year with no RIDDOR reportable Lost Time Incidents for employees and contractors by the end of the RIIO-ED1 period. | ● |
| Measure ourselves against other companies and seek inter and intra sector recognition/accreditation by participating in external benchmarking such the UK's 25 Best Big Companies, the National Equality Standard accreditation. | ● |
| Recruit and train over 1,000 staff as well as up-skill and develop existing employees to ensure that we maintain a suitably skilled and motivated workforce. | ● |
| At least one year within the RIIO-ED1 period with no RIDDOR reportable public harm resulting from our activities. | ● |
| Engage with two million children and members of the public on public safety over the RIIO-ED1 period. | ● |
| Maintain our community fund investing £300,000 per annum to prioritise working with partners to help people in fuel poverty. | ● |
| Create a group of UK Power Networks local community energy champions. | ● |
| Organise and deliver school activity days to encourage safe, efficient use of energy. | ● |
| Host two subject-specific priority issue focus groups on vulnerable customers and fuel poverty every year. | ● |
| Proactively contact all registered vulnerable customers to offer support if they are without power. | ● |

Transparency

# A company that welcomes scrutiny

As a monopoly provider of an essential service, it is important to us to be transparent. It is right that our industry should be subject to intense scrutiny. We welcome that scrutiny and do all we can to make it as easy as possible for anyone who seeks to understand us.

We want all our stakeholders, and particularly our customers, to be able to examine all aspects of our performance. That is why we set out in fine detail for all to see the statistics relating to our business, such as safety, reliability and customer satisfaction, as well as financial and environmental performance. This Annual Review and other reports, such as the recently published RIIO-ED2 Business Plan, are examples of how we do our best to make it easy for all our stakeholders to take a close look at how we are performing.

UK Power Networks has an employee bonus scheme – the Company Incentive Plan – through which we promote the delivery of our business vision. We incentivise our employees in line with the key elements of that vision, so everyone is working towards common goals that the company has agreed with its stakeholders. Employees are rewarded for achievements in the areas of safety, network reliability, customer service and cost saving.

### Incentivising our employees

Our goal as a business remains the same as it was in 2010, when we started as an independent business: to deliver what our customers want at the lowest possible cost. Since 2010, we have made great strides in terms of safety, the reliability of our networks and customer service. We are proud to say that we have achieved all this at the same time as being the lowest cost DNO in Great Britain.

### Main Company Incentive Plan for all employees

Linking performance with delivery for customers


Our regulator, Ofgem, sets targets for both reliability and customer service. We are financially incentivised to beat those targets and penalised if we fail to meet them. In 2021/22 we earned £81 million from these Ofgem incentives schemes.

External assessors verify all the relevant information before we submit our performance figures to Ofgem, so our customers can see evidence that these rewards are warranted.

**On this page you will see how we have performed against the following Sustainable Development Goals:**


90%

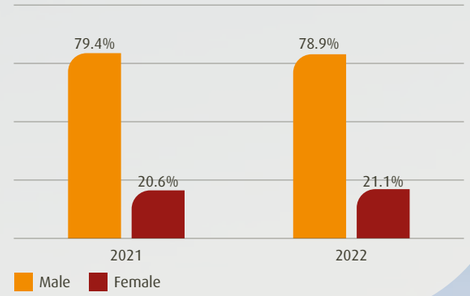
of UK Power Networks employees are covered by Trade Union Collective Agreements





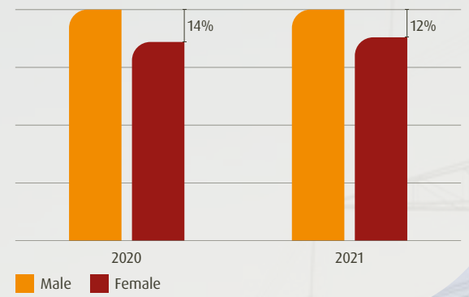
## Gender mix

UK Power Networks continues to be a male-dominated business, as is the case across the utilities industry. We are working hard to redress the balance and are beginning to see some progress in the composition of our workforce (see below). Our industry, along with engineering in general, has deep roots in being traditionally male-dominated, and such traditions take time to change. Education has a crucial role to play in making those changes. UK Power Networks is involved with schools and further education with a view to challenging stereotypes and encouraging greater take-up among women and girls of the relevant STEM subjects (science, technology, engineering and maths).



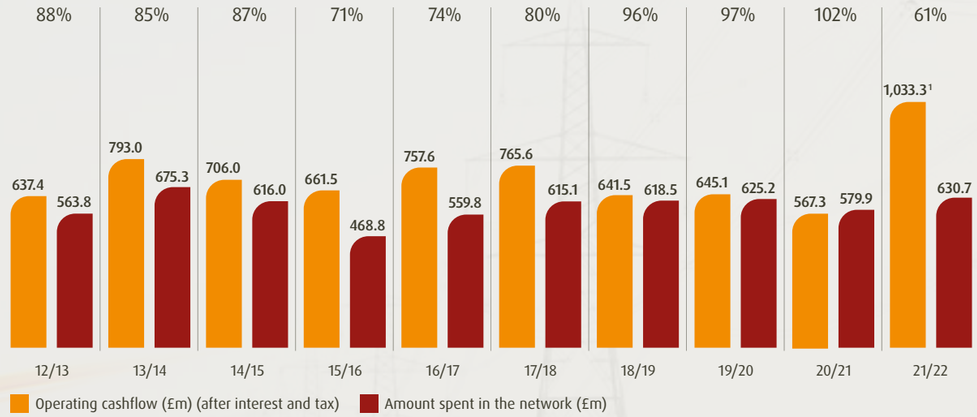

## Gender pay gap

The COVID-19 pandemic meant that our data collection relating to the gender pay gap was paused, and the next set of data will be released in April 2023. The most up-to-date data available covers the 12 months from April 2020 to March 2021, and shows continuing improvement in the gender pay gap at UK Power Networks, as measured by the Median Gender Pay Gap. Over the five years of reporting since the introduction of the Gender Pay Regulations in 2017, we have seen a 20% improvement in our Median Gender Pay Gap, and we are determined to improve it further. Although our gender pay gap is higher than we would like, it is in line with other engineering industries that have traditionally employed men in higher paid engineering roles. We are pleased to say that our rate of progress is better than the industry as a whole.




## Investment in the network

As we are a capital-intensive business, comparing our profit margins to service or retail companies can be misleading. Annual profit margins do not take into account long-term investment in new and existing assets. We believe that comparing how a business is investing the cash it generates is a better measure. Over the past ten years we have, on average, invested 83% of the cash that we generate from operations back into our infrastructure assets to benefit the 19 million people connected to our networks.




1 The operating cashflow after interest and tax is high due to an exceptional amount of £174m settled on intercompany loans receivable during the year, if this is excluded the average investment in the network would be 85% of cash generated from operations.

Organisational resilience

# Managing risks effectively

UK Power Networks is building a culture of preparedness, agility and responsiveness that is supported by continual scanning of the horizon in order to anticipate future issues. This helps us prevent, wherever possible, disruption to the ongoing service that we provide for our customers in London, the South East and East of England.

### Responding to extreme weather is fundamental

Being ready and able to manage storms and extreme weather conditions is a fundamental part of our organisational resilience. After the devastating storms of 2013, we overhauled our approach to dealing with major storms and developed a new, more robust way of managing them. This year, that approach was sorely tested. The UK saw seven named storms in three months, and three of those storms were within five days of each other. Storm Eunice hit in February 2022 and was the most severe and damaging storm to affect England and Wales since February 2014. This was the first time the Met Office had issued a red warning for wind covering South East England, including London. Our response to these extreme conditions (which you can read about on page 30) is testament to the substantial amount of planning and preparation we have undertaken. We prepare meticulously in anticipation of every major event, and hold reviews afterwards to ensure we capture the lessons learned and make the necessary improvements. This activity proved crucial with the recent unprecedented extreme weather set out above.

### Cooperation among DNOs

Our industry is regulated by Ofgem and DNOs are allocated their areas of operation, with no competition between operators. Through the Energy Networks Association (ENA) we are members of the NEWSAC[1] Mutual Aid agreement, which means that the DNOs come to each other's assistance when one DNO has an emergency and the other has the resources to help.

When Storm Arwen hit in November 2021, it significantly affected all DNOs apart from UK Power Networks. Within 48 hours, we made over 300 of our employees and contractors available to other DNOs to take calls and help with the clear-up. In February 2022, Storm Eunice arrived, predominantly affecting the southern half of the country. Other DNOs were all set to send their people to help us, but very soon after Eunice made its presence felt, Storm Franklin hit the north of England and Scotland, so our fellow DNOs were unable to help us. Nevertheless, we greatly value the principle of NEWSAC and we were pleased to be able to help other DNOs this year.

Thanks to the careful preparation and robust processes, our response to Category 3 Storm Eunice was our best ever in terms of speed and effectiveness. Within 24 hours, we had restored the electricity supply to 95% of customers who had lost power in the storm.

### Building a mature culture

Our focus remains on building a culture throughout the company that is always alert and prepared. Continual vigilance and scanning of the horizon for threats or shocks to business are central to this, and we are becoming increasingly mature as an organisation in how we do this. We saw the benefits of this vigilance as news of COVID-19 began to emerge in late 2019; our plans to deal with the pandemic were already complete when the government announced its methods of tackling it and all we had to do was to align our plans to those released by the government.

**On this page you will see how we have performed against the following Sustainable Development Goals:**

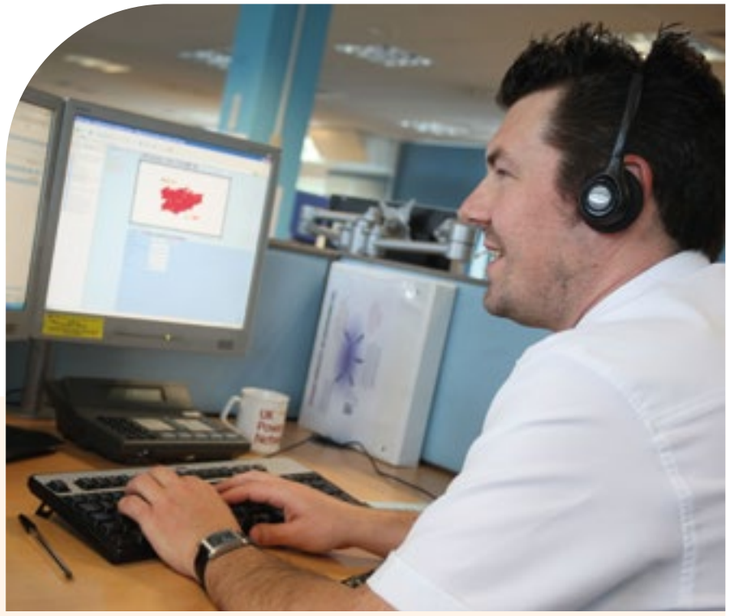
9 INDUSTRY, INNOVATION AND INFRASTRUCTURE

11 SUSTAINABLE CITIES AND COMMUNITIES

1 North East South West Area Consortium







## Adapting our learning to answer our needs

The value of exercises such as those described below is not just that we can be prepared for the circumstances we are investigating. The lessons we learn are often applicable to other situations. For example, we had made detailed plans for the supply chain problems that could arise because of Brexit, and those measures were easily adapted to deal with the fallout of the stranded container ship in the Suez Canal last year.

UK Power Networks holds a series of Risk Forums over the course of the year. These forums are a powerful way of integrating the Risk and Organisational Resilience functions in the company. Risk is a dynamic factor in the running of our business and the way we link it with our resilience planning is an example of the mature culture we are developing in our approach to resilience. This integration also helps people throughout the business to be aware of the need for planning for foreseen and unforeseen eventualities.

The Risk Forums report any significant updates into the Organisational Resilience Leadership Team and provide the opportunity for the business to explore many aspects of risk facing UK Power Networks.

Topics covered are:

- Enterprise Risk Management
- Health & Safety
- Physical Security
- Emergency Planning
- Business Continuity
- IT Resilience

### Scanning the world for potential challenges

As well as remaining continually alert to potential risks, we are driving ownership of the issues identified, in order to ensure that they are explored and understood as much as possible. A standing agenda item for our senior monthly Organisational Resilience Leadership Team (ORLT) meeting is for a senior member of the team to identify a crisis from any industry in any part of the world and bring it to the meeting to discuss its relevance to UK Power Networks with the challenge to the mantra "that could never happen to us". Before the meeting, the proposer will have looked in depth into the challenge, looking at the crisis from every angle and identifying if and how it has resonance with our operations. We are careful to specify that it is an active discussion with the whole audience in the ORLT and never a passive presentation to a group of people.

For example, the ORLT looked closely at the wildfires in California in recent years and examined their relevance to us. The fires were caused in some cases by sparks flying from overhead power lines when the ground below was extremely dry. We explored the likelihood of those circumstances occurring in our area. There are large expanses of vegetation in areas such as the Weald of Kent and Sussex, so we have reviewed and revised the precautions we take in case of prolonged dry weather conditions.

### Looking into intersectionality of threats

A further example of our maturing approach to anticipating and planning for risks to our business is our consideration of the possibility of concurrent threats. The world of potential threats is increasingly complex. Recent times have amply demonstrated the need to plan for myriad threats such as supply chain problems, the ever-present threat of a new or recurring pandemic, cyber threats, extreme weather, and the looming risk of energy shortages. We are now building scenarios, working with external agencies where relevant, and making plans to manage circumstances in which two or more of these threats materialise at one time.

### Cabinet Office Review of our organisational resilience

Each year since 2014 UK Power Networks has invited the Cabinet Office Emergency Planning College to interview its senior team and assess its organisational resilience. We remain the only DNO in Great Britain to be assessed in this way. In 2021 the interviews took place in September and once again UK Power Networks' assessment showed excellent scores and continuing improvement. The scores awarded are out of five (with five being the best and zero the least) across five different categories. In the most recent assessment, we scored the highest outcome (five) in two out of the five categories, and received the second highest (four) for the remainder. The categories assessed are: Risk Management (5), Leadership and Culture (5), Strategy, Governance and Integration (4), Business Continuity and Incident Management (4), and Crisis (Emergency) Management (4). We are particularly proud to know that UK Power Networks is the first organisation in the UK to be awarded a five in the Leadership and Culture category.

Operational performance

# Safety

Safety has always been and remains our absolute number one priority at UK Power Networks. We are committed to other vital measures such as the reliability of the network, excellent customer service and reducing costs, but safety trumps all these. We are proud to be the safest of all the DNOs in 2021 as we have been for nine out of the eleven years since 2010, when UK Power Networks started as an independent business.

**On this page you will see how we have performed against the following Sustainable Development Goals:**







### Lost time injuries

In 2020, we were concerned to see an uncharacteristic increase in our Lost Time Injury (LTI) record, which means that someone working for us needed to take at least a day off work due to an injury sustained at work. There were five such incidents in 2020/21, in contrast to our record of two incidents the previous year. We responded swiftly to understand and address the underlying reasons for this increase. The key salient factor that we identified was that the majority of the incidents involved contractors rather than our direct employees. We immediately convened a forum for contractors that was led by our CEO Basil Scarsella and attended by the most senior executives from our key contractors. This had the effect of achieving a whole year without a contractor LTI and meeting the RIIO-ED1 commitment of a year without an employee or contractor LTI.

### Working hard to keep complacency at bay

In 2021/22, we returned to our leading safety position among DNOs. Complacency remains our enemy. We recognise that every accident-free day we have requires more effort to ensure continued, relentless vigilance. This is a key message that we keep at the forefront of our minds and continue to reinforce with all our people throughout the business.

Trade Unions (TU) play an important part in safety at UK Power Networks, working closely with the company to keep our workforce safe and drive continuous improvement. We meet and consult with our TU colleagues regularly, in a variety of health and safety forums such as Regional and Company Health Safety and Environment Committees, Specific Action Teams (SATs) and weekly calls. Working together, we are confident that our safety culture and safety performance will continue to improve and make UK Power Networks a safer place to work.

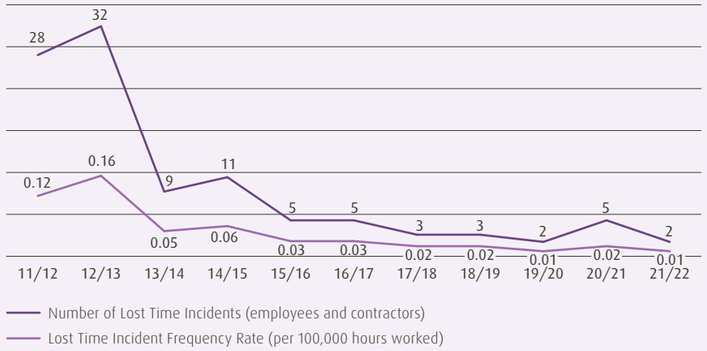
### 'Just' and 'only'

How we talk about safety has a profound impact on how we view it. In a way that is connected to the concept of complacency mentioned above, there can be a tendency to play down incidents or near misses. In doing so, we can minimise their gravity and impact, changing our perception of the risks involved. That's why this year we have been focusing on the language we use when we talk about incidents and near misses. For example, someone might say 'I was just over the speed limit' which does not reflect the reality of 'I was over the speed limit' or 'It's only a few weeks out of date', whereas 'It's out of date' is more accurate.





## Our performance in numbers




**2**

The number of incidents where employees needed at least a full day off work due to injuries in 2021/22

**94%**

improvement in the frequency rate of Lost Time Incidents since 2010/11 when the rate was 0.15. This is the number of incidents needing at least a full day off work, per 100,000 hours worked

Drawing our employees' attention to the dangers of this sort of thinking and how the words we use affects our perception has formed the backbone of much of our safety-related communications this year. We encourage everyone to notice and break the habit of 'just' and 'only' and, instead, to give safety the prominence in their minds that it deserves. This theme has run through many of our face-to-face briefings and we have had regular, sustained campaigns in posters, fliers and other channels to reinforce the message from a number of angles.

### An increasing focus on supporting mental health

We have a trained cohort of mental health first aiders throughout the business at all levels and we provide mental health support to employees working at home. Employees have access to our mobile Well-Point kiosk which allows them to self-evaluate a number of key health factors. We have established a network of health coaches and well-being champions who can support colleagues with the help of toolkits containing resources and advice.

### Public safety

As well as ensuring the safety of all those who work for UK Power Networks, we are also deeply committed to making sure that no members of the public come to any harm as a result of anything we do or fail to do. In the year that we are reviewing in this document, from April 2021 to March 2022, no member of the public was injured as a result of our actions.

### Targeting areas of risk

We target those industries, such as agriculture, construction and haulage, that we know carry a particularly high risk of coming into contact with our equipment in a way that can cause incidents. We have built on our relationships and continued our communications campaigns with trade bodies for scaffolders, hauliers, electricians and others connected with the construction industry. In addition this year, we identified nine languages that are prevalent in these industries in our areas of operation and made safety stickers available in those languages.

This year we have worked even more closely with local authorities to ensure that their projects can benefit from the messages of our Be Bright, Stay Safe campaign via the local authorities' planning portals. This means that people making planning applications are made aware of the importance of safety around electricity right from the very start of their project. We ran virtual workshops on power-related safety on building sites with the City of London Considerate Contractors scheme. In addition, we now have Memoranda of Understanding (MoU) with all twelve fire and rescue services in our areas, meaning we have a clearly articulated method of addressing electricity-related fires and other emergencies with the fire and rescue services concerned. We also have MoUs with five police services and are in discussion with the remaining eight.

### Safety focus on young people

As well as taking care of our employees and other professionals working in our area, we also undertake to keep the public safe as they go about their day-to-day lives. Education is the key focus here, and we work closely with schools and youth groups to ensure that young people understand the potential dangers of electricity as well as learning about energy saving at the same time. This year, in spite of the remaining COVID-19 restrictions, we engaged with more than 360,000 people through our website, school visits and other interaction with young people and the public. The overall target to reach two million members of the public over the eight-year RIIO-ED1 regulatory period has been achieved with a grand total of 3 million. This is against a cumulative target of 1.75 million (as of March 2022) which means we are 1.25 million above the cumulative target.

### Labelling every electricity pole for quick, easy reporting

Our areas of operation include acres of rural terrain with electricity transmitted across wires strung between wooden poles. We have hundreds of thousands of such poles across our Eastern and Southern regions (EPN and SPN). Completing the pole identification work recently carried out in SPN, this year we labelled over 490,000 poles in EPN with a unique identifier and a QR code. When a member of the public notices anything wrong with our assets, such as a low electricity cable or a problem with a wooden pole, they can scan the QR code. That takes them to a page on our website that gives safety advice on what to do and how to contact us. This means our engineers immediately know exactly where the faulty pole is and can respond to rectify it much more quickly than before.

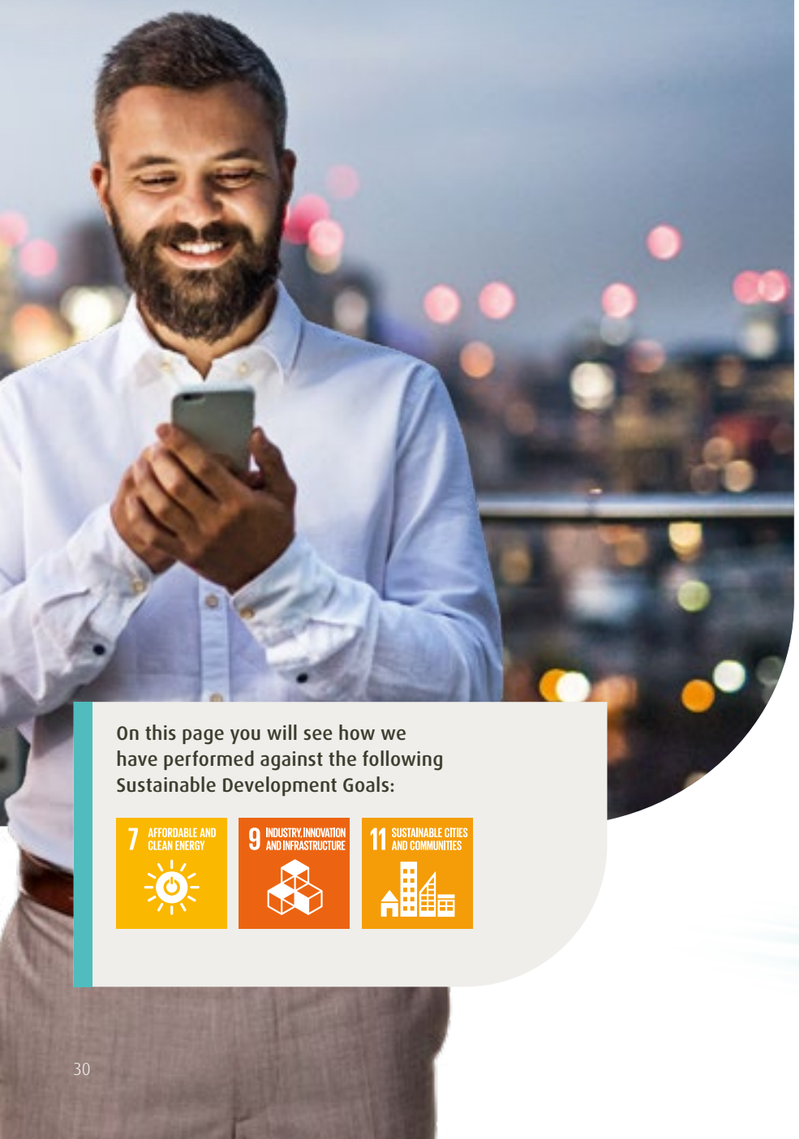
"It's quick and easy for members of the public to report problems with our equipment in a way that means we can locate them simply and get to the site quickly to fix them."

**Alex Williams**
Head of Customer Contact Centre at UK Power Networks

Operational performance

# Network reliability

The reliability of the electricity network is more important than ever as greater numbers of people have a growing dependency on local networks. Electricity allows customers to power their EVs, it enables them to work at home, to be connected in general and, increasingly, to heat their homes. It is central to our corporate vision to be the most reliable distribution network in Great Britain and, for most of the last 12 years we have achieved that.



**On this page you will see how we have performed against the following Sustainable Development Goals:**




## 2021/22 – one of the worst years for storms

The statistics our regulatory uses for the reliability of our networks do not include our performance during extreme weather but, of course, for many of our customers, the way we respond to storms is the most important part of our job. In terms of storms, 2021/22 was one of the worst years in recent times, with three named storms affecting the UK within the space of a week. Storm Eunice was the most severe and damaging storm to affect England and Wales since February 2014 and Storm Franklin followed hot on its heels.

The Met Office rarely issues red warnings, but it issued two for Storm Eunice, which hit our area of operation in mid-February 2022. Our overhead lines were damaged in over 1,800 locations and the weather caused a month's worth of faults in a day. Our call centre handled the equivalent of nearly 18 days of calls in one day and, on average, calls were answered in under a minute. The second red warning concerned the high winds associated with Storm Eunice and this was the first time such a warning had been issued for wind covering South East England, including London. Storm Franklin then hit about 48 hours later. This presented enormous challenges to our recovery teams, but thanks to the strategic planning we have carried out in recent years, 95% of the 600,000 customers who lost power were reconnected within 24 hours.

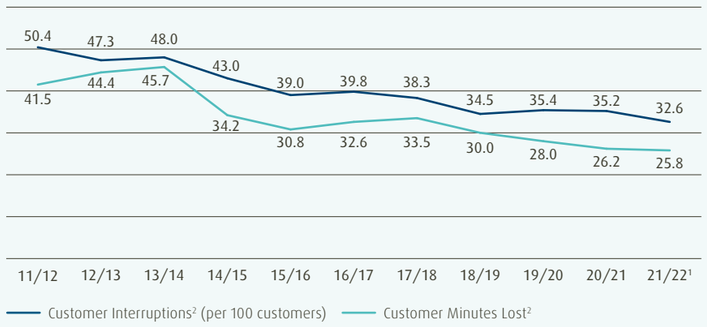
## Our best year ever for reliability

As mentioned above, when we measure the reliability of our networks, we – like every Distribution Network Operator – exclude the data relating to the major storms. We measure reliability in two ways: the number of minutes for which customers are without electricity (Customer Minutes Lost (CMLs)) and the absolute number of interruptions to customers' electricity supply (Customer Interruptions (CIs)). Since we became an independent company in 2010/11, our CMLs have improved by 60% and our CIs by 51%, and the year under review (2021/22) was our best ever performance in terms of the reliability of our networks.





## Our performance in numbers




1. 2021/22 figures presented are provisional based on our regulatory submission at the date the accounts are signed.
2. Figures are a weighted average of the three licence areas and exclude exceptional events.

**32.6 CI**

Our power cut performance has improved by 51% since 2010/11 when our CIs were at 66.1, which means customers now see an interruption on average once every three years, compared to an average of once every 18 months in 2010/11.

**25.8 CML**

A customer connected to our network will be off supply on average for less than half an hour per year. This is a 60% improvement over 2010/11 when our CMLs were at 64.20 minutes.

## Focus on quality of supply

This success is a result of a clear strategy, careful planning and hard work. Some years ago, we created a new focus in our team to concentrate on quality of electricity supply. This allowed us to pursue a number of initiatives, both technological and operational, designed to improve the reliability of our networks. This focus allows us to take a holistic view of all the programmes and initiatives and to manage them in the most efficient way. This strategy has paid dividends, as we have seen the reliability of our networks steadily improve to an impressive 99.99%.

## Prevention is better than cure

We are not, however, resting on our laurels. We have a strategy of prevention and we continue to pursue technological innovations that will help us to anticipate and avert emerging problems, before customers are even aware that anything is wrong. For example, we are working in collaboration with a number of companies, including another DNO, Scottish and Southern Electricity Network (SSEN), to trial the use of a new type of recording device that identifies disturbances on the network that indicate emerging faults. As well as averting individual problems, this preventative approach reinforces the overall health of the network, making it more robust under pressure, such as that experienced during storms.

## Bringing data-analytics to tree-cutting

UK Power Networks has an increasingly sophisticated data analytics function that helps us understand our customers and the service we provide for them. You can read about how we use data in relation to customer service on page 33. Our tree cutting programme is also informed by our use of data analytics (see tree-cutting case study).

The tree-cutting programme is coordinated with the replacement of switch gear and other routine maintenance, in order to maximise the cost-efficiency of the works. The data-analysis of the locations of trees is another tool in our box. It builds on our established use of the Light Detection and Ranging (LiDAR) plane patrols that use laser-frequency light to detect trees and other vegetation near our overhead power lines and helps us identify those posing the greatest risk.

## Detecting faults below ground

The tree management programme applies predominantly to our more rural regions, EPN and SPN, but we also monitor the urban network in London (LPN) closely to ensure that we detect and avert potential problems there as well. This year we have worked with organisations around the world – in Canada as well as closer to home in the UK – to find more and better ways of locating weak points in the underground cable network so we can remove them before a fault occurs. The devices we have been testing this year measure the current and voltage of a fault and, using a slightly different system from the overhead tools, allow us to pinpoint to a high degree of accuracy exactly where on the underground network the fault is.

## Tree-cutting

In the past year, we have invested £19 million to keep branches away from power lines and help prevent power cuts. To ensure this was being spent efficiently, on a more scientific and sustainable basis, our analytics team designed a new computerised tool to help tree-cutting colleagues decide when, where and how it was best to clear trees and bushes away from power lines. Taking into account different varieties' growth rates, tree ages and locations, the software calculates a risk ranking for each tree, indicating the priority it should be given for trimming for maximum benefit. This also helps ensure no trees are cut unnecessarily.

"We have a long-established programme of tree cutting which is carefully managed to make sure we prioritise trimming trees which present the greatest safety risk, or those most likely to touch overhead lines.

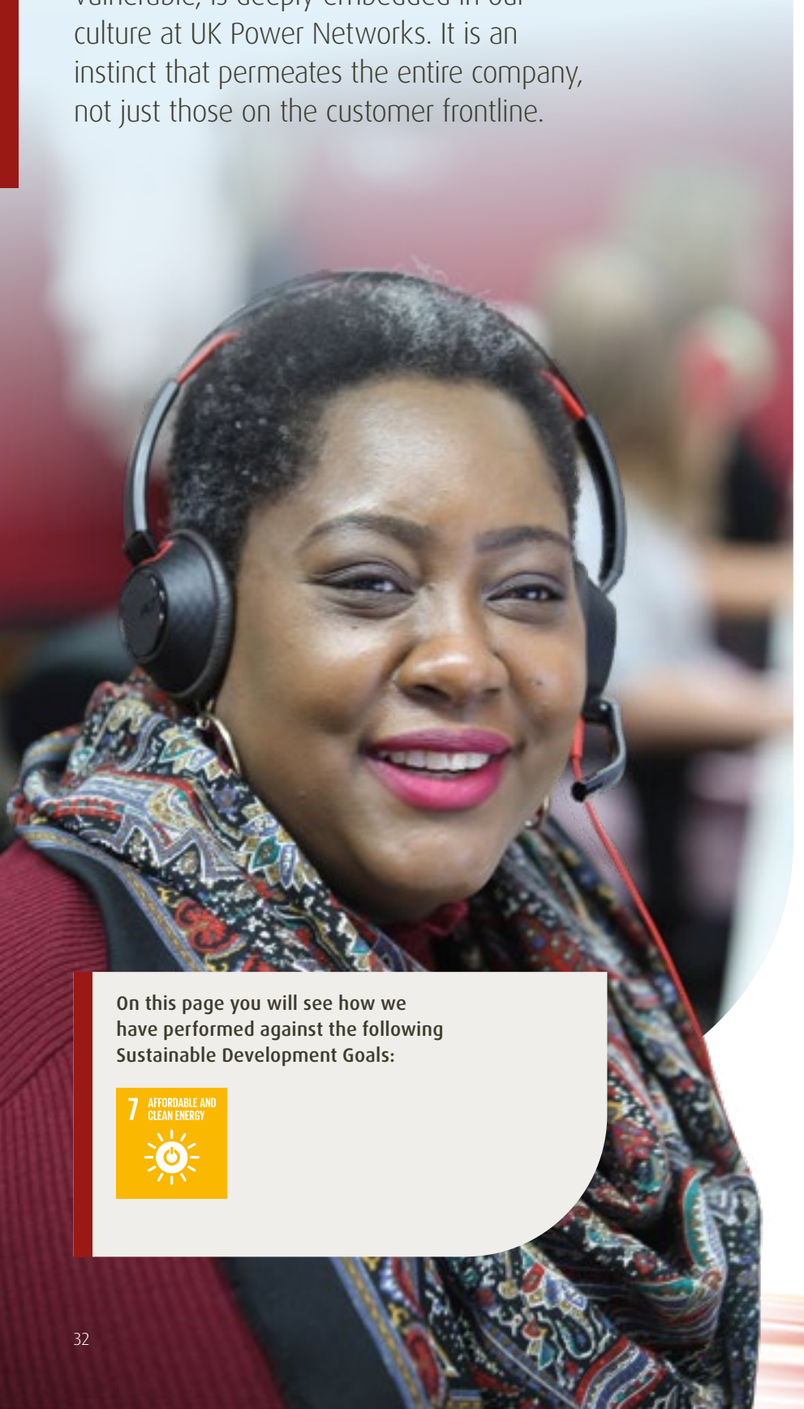
The analytics team understood our objectives and the successful use of their tool has added to our existing technology such as the use of LiDAR. It helps us make the best decisions about when and where to trim trees across the communities we serve."

**Martin Peters**
Tree Manager at
UK Power Networks

Operational performance

# Customer satisfaction

Taking care of all our customers, especially those whose circumstances make them vulnerable, is deeply embedded in our culture at UK Power Networks. It is an instinct that permeates the entire company, not just those on the customer frontline.



**On this page you will see how we have performed against the following Sustainable Development Goals:**

7 AFFORDABLE AND CLEAN ENERGY

We are delighted that our strong customer service culture is reflected in objective assessments of our levels of customer satisfaction. This year again, Ofgem ranked us Number One for our Broad Measure of Customer Satisfaction score at 93%, and in January 2022 we were ranked fourth best customer service provider in the UK in the Institute of Customer Services (ICS) survey across all industries. We were the only utility company in the top five. The ICS measures five dimensions of customer service: Experience, Complaint Handling, Customer Ethos, Emotional Connection and Ethics. We pride ourselves on the embeddedness of our customer service culture, so it was particularly rewarding to see that we were the only company to feature in the top 10 of each of these five dimensions.

## Getting ready for low carbon technologies

Aside from the regular work we do to maintain these excellent levels of service, this year we have focused on preparing our network and range of services to be ready for the considerable uptake we have seen in the adoption of low carbon technologies in our area, particularly EVs. We saw an increase in enquiries about low carbon technology (LCT) connections of over 600% this year, as LCT is becoming a reality in many locations. People have been buying EVs at rates way ahead of recent forecasts, and we have developed cutting edge infrastructure and put services in place to respond to that increased demand.

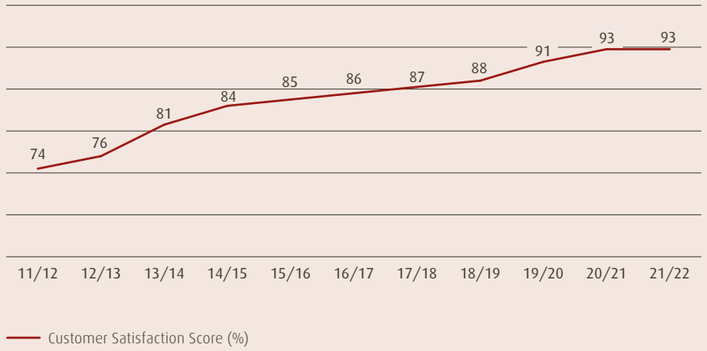
Smart Connect is a portal that we introduced this year for domestic and business customers who want a connection for LCTs at their premises. The benefits of the portal include automated assessment to reduce processing times and issuing instant approval when criteria are met, automatic referrals to our internal teams if required (for example upgrading the main electrical fuse), a simple dashboard with a view of all of the customer's requests and the status, the ability to add images and supporting documents to a request, and search functions to help customers find requests they have raised with us. Smart Connect can process connections for the following domestic LCTs:

- Electric Vehicle charge point (EVCP)
- Vehicle-to-grid (V2G) EVCP
- Heat pump
- Solar panels
- Battery storage





### Ofgem's Broad Measure of Customer Satisfaction




**93%**

Our highest ever customer satisfaction score

**Ranked No. 1**

Ofgem ranked us No. 1 for our Broad Measure of Customer Satisfaction score

## A ten-day application process now takes a matter of minutes

Before we introduced Smart Connect, approvals for this sort of connection usually took the industry standard of approximately ten days from application to approval. With Smart Connect, the process can be completed in a matter of minutes. Domestic customers using this service awarded us 9.7/10 for customer satisfaction and business customers scored 9.4/10.

## The role of smart meters in a power cut

People who are medically dependent on equipment powered by electricity, such as oxygen ventilators, are at particularly high risk during a power cut. In 2021/22 we teamed up with Smart Energy GB to encourage such customers to have a smart meter installed. We found that 75% of people in these circumstances were not aware that their power distribution company would become aware that they were experiencing a power cut without them having to contact the company, and instead the power distribution company would be able to contact them and their emergency contacts to alert and support them. Sixty-seven percent of those contacted said that they would install a smart meter as a result of the campaign.

## Serving customers on the move

Data is an increasingly valuable resource across UK Power Networks and this year we have been analysing data in order to identify and understand changes in patterns of customer usage and requirements, in order to continue to deliver excellent service. As you can read on page 31 of this Annual Review, we have made great strides in reducing the number and duration of power cuts across our networks in recent years. Nevertheless, with the advent of EVs, the impact of a power cut is intensified, since it could mean that customers are unable to travel as they usually would. Using vast, anonymised data sources from a mobile phone operator, in 2022 we were able to model and understand how customers are moving across our network geography. A power source at home is no longer the only place where customers need to be able to access electricity. People are travelling from area to area, as commuters, entrepreneurs, students, visitors and more, and those driving EVs need to know quickly about any problems with the power supply. That's why we have been looking into the communications needs of these more mobile customers. Channels such as the satellite navigation system, WAZE, are often sources of information for drivers, as are community apps such as NextDoor. We are assessing these as channels for us to communicate with our customers in the event of a power cut, as that will affect their ability to complete their journey. We are also looking into finding ways to feed in to the information gantries above the motorways, to alert drivers of problems at, for example, motorway EV charging stations.

## Support for customers affected by storms

A significant element of how satisfied our customers feel about our service depends on their experience during power cuts. You can read about how we responded to our customers during some of the most severe storms of recent years on page 30. Part of that customer service related to an improved approach to estimating and communicating our Estimated Times of Restoration (ETRs) during unplanned power cuts.

Our research and customer feedback told us that, with the greater prevalence of working at home, people are increasingly less tolerant of changes to the predictions of when power would be restored. We have made it a priority to improve our approach to establishing and communicating when power is likely to be restored to customers.

We also developed a real-time outage dashboard that helps managers understand the experience of our customers live during a power cut, and helps managers make informed decisions about how to adapt the customer service approach and support customers as incidents unfold.

## On-street charging

In 2021/22 Kent County Council took a strategic approach to developing EV on-street charging infrastructure throughout the county. UK Power Networks has been working closely with Kent County Council to assess its EV charging needs. We listened to what they told us and designed a process to satisfy those requirements. In 2022 we began a programme to deliver over 500 on-street EV chargers across the county in a community-wide electrification scheme. West Sussex and Surrey are now looking to replicate the Kent approach with help from UK Power Networks.

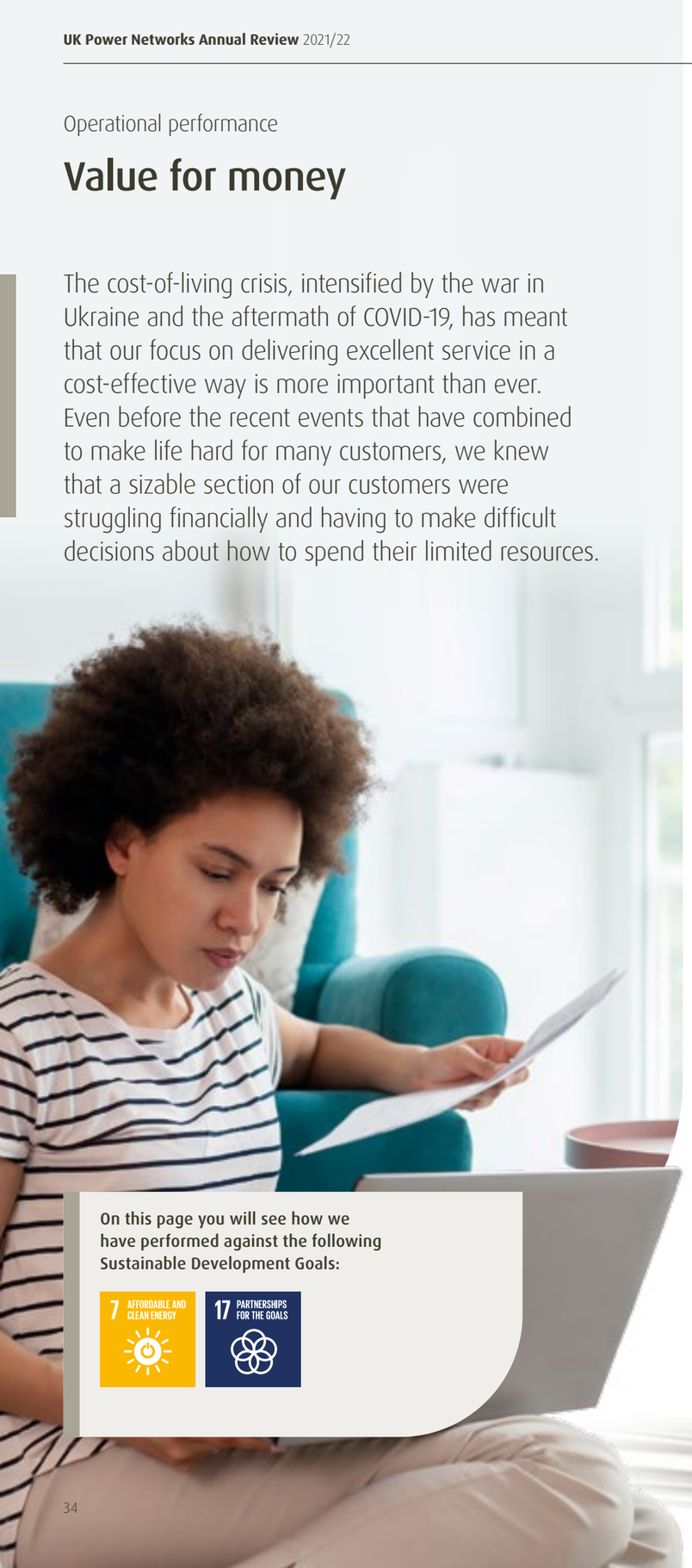
**"UK Power Networks provided a key role to Connected Kerb during the planning phase by providing a dedicated team to support early identification of Points of Connection, estimates on available power and connection costs for each site."**

**Nathan King**
Head of Infrastructure
at Connected Kerb

Operational performance

# Value for money

The cost-of-living crisis, intensified by the war in Ukraine and the aftermath of COVID-19, has meant that our focus on delivering excellent service in a cost-effective way is more important than ever. Even before the recent events that have combined to make life hard for many customers, we knew that a sizable section of our customers were struggling financially and having to make difficult decisions about how to spend their limited resources.



**On this page you will see how we have performed against the following Sustainable Development Goals:**







We are acutely aware that our customers do not have a choice in who their electricity distributor is, so we take our responsibility to provide them with the best possible value for money very seriously. We are always on the lookout for ways to save our customers money.

### Money-saving innovation in infrastructure

We are always looking for ways to save our customers money, and often we find solutions that do more than that. In Dunstable Downs in Bedfordshire, we have devised a new way of laying electricity cables that has benefits across the board.

Working in close collaboration with the National Trust, which owns the land on Dunstable Downs, we have come up with an innovative way of laying electricity cables that is not only safer, quicker and less disruptive, but will save around £300,000 in 2021/22. It will also radically improve the appearance of this area of outstanding natural beauty (AONB), as it does away with two tower lines that run across the top of the Downs.

Using a cable plough that installs the power lines into the ground, we cut a groove in the land behind the machine, rather than using the traditional open cuts in the earth. Doing it this way is far more efficient that the traditional method. We can lay up to 10,000 metres of cable in a day, compared with the usual two to three weeks. This provides multiple benefits. As well as improving the appearance of the area, it also means much less disruption to the land. It is far safer as there is no open excavation, so fewer opportunities for slips, trips and falls, and less manual handling of ducts and other material. This would make this method better value for money already but, in addition, because of the nature of the land, the speed of this operation means that the harvest is not disrupted.





## Annual domestic charges (2015/16 – 2021/22)

**Domestic unrestricted customers based on a typical annual consumption value of 2,900 kWh**


### Unlocking greater customer participation in EV flexibility

Using findings from our smart charging trial with Octopus Energy, UK Power Networks has developed a simple process that means providers can put a value on how much customers should be rewarded for their EV flexibility. Flexibility in this context means the ability to adjust the timing of the customers' consumption of electricity and the related ability to return power to the grid that has been generated through renewable means. Flexibility that is provided by EVs could reduce costs to our customers by £250 million by 2028. By engaging with aggregators and suppliers who will provide this service, we established that the ability to measure how much consumers shift their electricity in response to a price signal is crucial to remunerating consumers and unlocking participation. It turns out, however, that the current industry approach, which was developed to manage large power stations, is not suitable for EV flexibility.

Our new approach provides aggregators with a simpler process to put a value on this flexibility. We are delighted that Octopus Energy is embedding this as the basis of its Time of Use tariffs and advocating its use to other DNOs to benefit all customers across the country.

### Tackling utility bill affordability through collaboration

National Energy Action's research says that 8.5 million UK households could face fuel poverty by October 2022. Vulnerability experts and delivery partners told us that voluntary agencies, which are often the first port of call for people facing financial difficulties, are increasingly stretched and need support to serve their users. The scale of the challenge is huge. UK Power Networks is working hard to maximise the impact of its work, working as part of a broader coalition to develop a coordinated enduring response. This needs to influence policy at a national level as well as delivering practical support for customers in our regions.

In 2021/22, we proved the benefits of cross-utility collaboration through our partnership with Scope, Southern Gas Network (SGN) and Anglian Water to help people with disabilities reduce their electricity, gas and water costs through Scope's Disability Energy Support. This year 3,316 customers nationally and 572 in our areas benefited from this service.

In addition, along with SSEN and Southern Water, we joined forces with SGN to co-fund a Citizens Advice fuel poverty programme to support 145 individuals in West Sussex. Learning from this, we set out to define a systemic, scalable and sustainable approach to maximise our collective impact and increase our support. We contacted SGN, Cadent, National Grid, all water companies in our regions, nine local authorities and five energy suppliers who have signed up to Energy UK's Vulnerability Commitment, to co-develop a joint regional delivery framework to tackle utility affordability. Together, we are establishing a working group to design the approach, developing arrangements to systematically pool our vulnerability data to develop a common, richer understanding of the needs of our shared customers. We are sharing the benefits of our industry-leading analytics capabilities, allowing the group to identify the location and characteristics of households in or at risk of fuel poverty across our regions, to collectively target areas and customer groups who most need our support.

## World-class procurement

At UK Power Networks we recognise that we are spending our customers' money, so we do so with great care. Our specialist teams buy in a wide range of goods including electrical cables, substation kit and fleet vehicles, along with services ranging from roadworks contracts to telephony and IT support. We put a great deal of consideration into how we buy these goods and services for the business. In order to get the best value for our customers' money, we are constantly honing our supply chain to make improvements and ensure it is leaner and greener.

This approach to procurement has earned us a place in an elite worldwide group of companies that have gained the Chartered Institute of Procurement & Supply (CIPS) Corporate Certification advanced 'Platinum' award. We are one of only four organisations worldwide who have ever been awarded full marks across all areas of the assessment.

"UK Power Networks used the CIPS process as an external benchmarking exercise for their organisation and thus got great value from it, enabling them to continuously improve in providing a world-class service"

**Alan Martin**
Head of Procurement Excellence at CIPS

Operational performance

# Innovation and the path towards Net Zero

Innovation is central to our vision, as we strive to be the most innovative of all the Distribution Network Operators. Creative, original ideas and thinking have served us well in recent years and turned innovation into action. That is why we are continuing to lead the industry in preparing the electricity infrastructure and network for transition to Net Zero.

**On this page you will see how we have performed against the following Sustainable Development Goals:**




We are recognised across the energy industry as pioneers in both high-tech solutions and creative, ground-breaking approaches to the challenges we meet. This is the thinking we bring to bear, be it preparing for transition to Net Zero, saving our customers money, looking after the most vulnerable of our customers or promoting biodiversity around our substations.

### Restructuring to bring innovation into all aspects of the business

This year we restructured parts of our business, to ensure that the whole of UK Power Networks is able to draw on the resourceful, original thinking at which we excel. We have expanded our innovation team and incorporated the department responsible for the strategic approach to supporting our most vulnerable customers. This chimes with our recognition across the business that many issues overlap and intersect, and that all aspects of the business can benefit from creative thinking.

We have already begun to see the value of this new structure, with innovative approaches to our initiatives to expand the PSR. This year we have targeted social media much more broadly, for example reaching out to people whose grandparents could be eligible for the PSR. We also engaged a number of TikTok influencers whose followers are, for example, young parents in disadvantaged areas of South London.

### Socially Green

Further illustration of the benefits of bringing these vital parts of the business together is provided by an innovative tool we are developing, called Socially Green. This is a sophisticated mapping tool that allows us to identify those sections of our operating areas where customers are most likely to be or to become vulnerable as a result of their circumstances. The mapping tool, which presents information visually, collates data on challenges customers are facing that can prevent them from enjoying the full benefits of the energy system. This includes indicators of fuel poverty or risk of being left behind in the Net Zero transition.





### Low Carbon Technologies (LCT) predicted growth

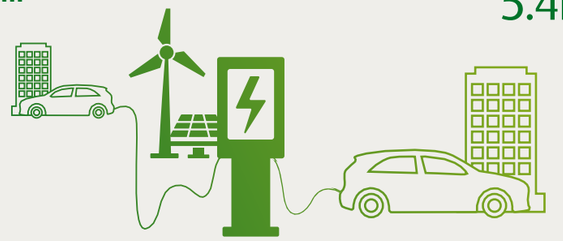
**By 2030, 5.4m LCT[1] are expected to be connected to our network.**

2022

**0.7m**

2030

5.4m



1 LCT include EVs, Heat pumps, District heating connections and homes with solar panels.

**58**
**innovative solutions**

Since the beginning of RIIO-ED1 to date (2015/16 – 2021/22), we have adopted 58 innovative solutions into our everyday business as usual operations

**£330m**

of customer savings due to innovation over the last seven years (2015/16 – 2021/22)

### A stand-alone DSO to make sure the customer always gets the best deal

One of our most important innovations that we announced this year is our commitment to create the UK's first independent Distribution System Operator (DSO). This function within UK Power Networks will operate as a separate legal entity with its own supervisory board. This innovative development is designed to address the tension that exists in DNOs with respect to their approach towards building new assets on the network. In the current structure under Ofgem, DNOs are incentivised to build assets on the network and we are conscious that such solutions to constraints on the network are not always in the customers' best interests.

An independent and accountable DSO will look at the most cost-effective way of expanding the capacity of the network. That may indeed be to build more assets, but it is more likely to call for flexibility on the network. For example, a neighbourhood might be seeing an increase in the volume of EVs meaning additional capacity will be required, but it is not clear when and how much. The traditional response from a DNO would be to invest in new infrastructure the moment it is required. A DSO, on the other hand, would challenge that decision and propose buying in flexibility in order to extend the substation's lifespan while there is uncertainty remaining over exactly what level of new capacity is required. This option would ensure that when the new capacity is delivered, it is the right investment in the right place at the right time.

Our best minds have been working on this innovation and Ofgem has indicated that it is considering using our approach as a model for the future of power distribution across the country.

### DERMS – an advanced management system for a smart energy system

In order to support our ground-breaking approach to establishing a DSO within UK Power Networks, we have also designed and launched DERMS, which stands for Distributed Energy Resources Management System. The DERMS is an advanced, automated, intelligent system that enables us to connect more low carbon technologies to the network by optimising the flow of available power across it. Having the DERMS integrated into our entire network control system opens the door to an almost limitless range of smart grid applications. Having built a smart system means that we are able to bolt on new features and technology as they emerge without re-designing our entire system every time. It means the system is ideally placed to take advantage of emerging future technologies around big data, machine learning and artificial intelligence.

Across our network, the DERMS will enable more than 6GW of Distributed Energy Resources (DER), which is mostly renewable energy like wind and solar, to connect to the network faster and more cheaply. That's enough capacity to power four million homes without the need to spend time and money building new electricity infrastructure. So far, since 2014, UK Power Networks has connected over 142MW of generation using the DERMS, with a further 6GW of flexible connections in the pipeline. It has saved our customers over £118m since then. These are savings that go to owners and operators of renewable energy plants like wind and solar, helping to support the financial case for more clean energy. In 2021/22 itself the DERMS has reduced carbon emission by 23,646 $tCO_2e$.

### CommuniHeat – putting communities at the centre of climate action

We reported in last year's Annual Review that we were working with Barcombe, an off-gas-grid village in East Sussex, to develop a blueprint for decarbonising the village's domestic heating in a way that could be replicated by other off-gas-grid communities. This project was the first of its kind in the UK and ran until March 2022, providing real-world data and input from local residents. It produced a mountain of data which feeds into the town's digital twin, a simulated replica built with real-world energy data from the village, to create a practical and scalable plan on how off-gas-grid communities can decarbonise their heating. Analysts are assessing different solutions and calculating costs of various community initiatives for low carbon heating, such as electric heat pumps, small district heating schemes or a large-scale heat network for most of the village.

Operational performance

# **Innovation and the path towards Net Zero** continued

### Open energy data

In recent years, UK Power Networks has enhanced its approach to sharing data. This has required a cultural change where we become more comfortable with sharing data unless there is a good reason not to. Open energy data is a key enabler of Net Zero as it makes it easier for LCTs to connect and, as it supports open energy innovation, it also increases energy market competition. In 2021/22 we built on this new culture in order to embed it further. Based on the findings of our extensive engagement with stakeholders such as technology providers, universities and local authorities, we launched a new Open Data Portal.

The Portal provides data in a range of formats, including geospatial and visual options, and brings together our own datasets with thousands of other data sources, providing unparalleled access to one of the biggest datasets on the UK's electricity network. We are the first DNO to become a full member of the Open Data Institute, and we engaged Open Data Manchester and the World Bank Group to ensure our industry-first Open Data Principles would reflect best practice from beyond our sector.

Our data is already driving value. We are supporting key flexibility market platforms such as NODES, which uses our Open Data to operate its sustainable energy marketplace service. And, building on our DSO dashboard, we published flexibility datasets and information on previous bids, which can be combined with our other datasets to identify flexibility opportunities and inform pricing.

### Smart Enquiries

Smart Enquiries enables customers to raise jobs, such as fuse upgrades and tree trimming jobs, through our website, rather than having to answer a questionnaire over the phone. This streamlined, joined-up process reduces the time it takes for a customer to raise an enquiry from around 15 minutes to five, and it reduces internal work in the same way, from 15 minutes down to five.

## Optimise Prime

Optimise Prime is the world's largest trial of charging solutions for commercial EV fleets.

UK Power Networks is working on it with Uber, Royal Mail and Centrica and it has been running since July 2021. The study is a great example of how innovative collaboration between network operators and industry can create value for everyone, including society at large. Its interim findings, released in 2021/22, included:

### Money saving for clients

Results demonstrate that fleet managers at depot-based operators such as Royal Mail can get the capacity they need without spending an additional penny on net infrastructure through profiled connections by using the Site Planning Tool.

### Better planning

For fleets that charge at home or on the move, fleet managers can now forecast when, where and for how long fleets need to charge with 95% accuracy. Smart charging, profiled connections and flexibility along with a Site Planning Tool make it easier, more practical, and cost-efficient for fleets to see alternative scenarios and switch with confidence. We forecast that customers could save up to 12 times the funding amount through reducing network reinforcement work.

### Reducing carbon emissions

The project plays an important role in helping the UK meet carbon reduction targets by creating a comprehensive understanding of commercial EVs' impact and opportunity.

### Understanding connection costs

It is important for DNOs such as UK Power Networks to understand that connection costs are not the major driver of commercial fleet electrification costs, but they can contribute to making or breaking the investment case

### Driver confidence

Charging facilities are key to giving drivers the confidence that they can fulfil their daily work tasks.

### The role of flexibility markets

High complexity and automation required to bring down transactional cost mean that fleets are likely to participate in the flexibility markets via intermediaries such as aggregators or charge point operators.

**"With businesses buying 58% of all new vehicles in the UK, it will be commercial vehicles that determine the speed of the transition to low carbon transport. Companies such as Royal Mail and Uber no doubt recognise the impact their emissions have on the environment and their involvement in Optimise Prime serves as a great example of the commitment they and many like-minded companies are making to address their impact on the planet. Projects like Optimise Prime can help create a 'replicable gold standard' in the global rollout of EVs."**

**Martin Kochman**
VP Head of Customers and Industries at Hitachi Vantara






### Timed Connections make it quicker and cheaper for customers to connect

UK Power Networks has a strong track record of technical innovation and of making the best possible use of the lessons we learn. This helps us deliver real-world benefits to our customers, such as our development of Flexible Distributed Generation (DG) connections and Flexibility Services/Demand Side Response (DSR).

This year, we developed Timed Connections, which allow customers to use more capacity during off-peak times. This is especially useful for EV charging, enabling customers to connect and charge EVs more quickly and at lower cost. This is an innovative product and has, to date, saved connecting customers £2.8m. It is expected that this approach will be a significant contributor to ensuring the low carbon transition is managed cost-efficiently.

Meeting our customers' evolving needs when it comes to connecting to our network is at the centre of our EV Readiness Strategy. Last year, we finalised a tool that allows us to assess applications for a timed connection more quickly, helping customers such as local bus depots to be connected faster and at considerably lower cost. This year we have continued to harness innovation to drive improved customer experiences. For example, we developed a project to deliver an automated software solution to analyse the network to identify opportunities for timed connections. This will make it quicker to assess timed connections, leading to faster, lower-cost connections and lower costs, thanks to less need for network reinforcement. We also conducted a study into the application of Active Network Management software to time-profiled connections (up to 48 segments per day). This will be trialled as part of the Optimise Prime Network Innovation Competition-funded innovation project (see page 38). Going a stage beyond simple time-profiled connections, this will allow connecting customers to benefit from yet higher asset utilisation to reduce the connection cost of depot-based electric vehicle fleet charging.

### Cheaper public charge points to combat EV charging inequality

UK Power Networks is driving an initiative to install public EV charge points on streets in East Anglia that could otherwise be left behind in the UK's transition to Net Zero. The new approach, evolved as part of the Charge Collective project, reduces the cost of reinforcing the electricity network for connecting customers, so keeps costs as low as possible.

Over 50% of households where we deliver electricity do not have off-street parking, so it is harder for them to consider an EV as they would have to rely on public chargers. We are working with local authorities to show the value in a scalable, long-term means of incentivising new charge points.

Under this initiative, for example, 8,000 people in selected areas of Cambridge which lack public EV charge points, will get access to charge points within five minutes of their homes. Charge points will continue to be installed across Cambridge and Norwich so that 50,000 people will have one within a five-minute walk of their front door.

The findings from the project are informing local authorities' Local Area Energy Plans, which ensure that people who have to park on the street can take part in the transition to EVs.

## Low carbon heating options for social housing

New hybrid boilers – which use both gas and electricity – will be installed this year alongside solar panels and batteries in up to 25 social housing homes across the South East. The compact hybrid heating systems have smart controls that can automatically switch between gas and electricity, taking into account different factors including fluctuating energy costs. By adopting the optimum energy source, the boilers allow residents to use less energy from the electricity network.

**"What makes this exciting project unique is the exceptional collaboration from all the partners involved, as well as its focus on those in society who otherwise would have difficulty in keeping up with Net Zero."**

**Dave Raymond**
Regional Development Manager at SGN

UK Power Networks Services

# Delivering major national power infrastructure solutions

UK Power Networks Services is the commercial arm of UK Power Networks that manages private energy networks and delivers major national power infrastructure projects for customers on a competitive, commercial basis.

In the year under review, UK Power Networks Services has continued to extend its portfolio of projects helping businesses to manage their electricity infrastructure better and make progress in their journey towards Net Zero. As we continue to grow, we are particularly proud that, for the sixth year in a row, no one who works for us, including contractors, has had an accident that required them to take a day or more off work.

### Focus on ports

Marine transport continues to play a vital role in global trade, but the nature of ports in the UK and around the world makes the decarbonisation of the marine industry one of the most challenging areas in the journey towards Net Zero. Although the development of electric shipping is an important long-term objective, the most significant opportunities for decarbonisation right now relate to the electrification of the complex infrastructure of ports. UK Power Networks Services is advising a number of UK ports on how they can adapt their existing infrastructure to reduce emissions through electrification.

### Helping Port of Sheerness towards Net Zero

In February 2022 we announced that we are working with Peel Ports, which owns the Port of Sheerness, to help them become a Net Zero port operator by 2040. The Port needs to continue to operate and grow at the same time as reducing its carbon impact. UK Power Networks Services is undertaking detailed modelling and analysis of the Port of Sheerness's electrical network, providing a clear picture of its load and voltage profiles. With this improved understanding of its infrastructure, the Port of Sheerness will be better placed to achieve its carbon reduction ambitions at the same time as maintaining a resilient energy network.

### Strategic advice for the Port of Tyne

The Port of Tyne has similarly ambitious decarbonisation goals, with a goal to reduce net greenhouse gas emissions to zero by 2030 and to electrify the entire port by 2040. UK Power Networks Services is working with the Port of Tyne to articulate a detailed understanding of its current and future electricity network, as they implement new technologies such as electric cranes and EVs, and embed sustainable generation such as solar photovoltaic panels on site. Our work for the Port of Tyne involved modelling of its existing network and of future load growth and the impact that will have on the network. We also worked with the Port of Tyne to identify measures that could resolve issues that could arise as a result of the forecast load growth on the network. We are helping to ensure that the Port of Tyne's decarbonisation strategy is both environmentally and commercially viable.

### Collaborating with Hitachi Energy

UK Power Networks Services has a strong track record in advising ports on strategies such as greener ways to provide shore to ship power for marine vessels, how to transition cranes, forklifts, tractors and other vehicles from petrol and diesel power to electric, and how to integrate new energy technologies such as renewable generation and hydrogen.





### Our clients

Our portfolio includes a range of high-profile organisations from both the public and private sectors, including five of London's airports, High Speed 1, Network Rail, London Underground, Southern Water, Aspire (Ministry of Defence) and Canary Wharf.

### Accreditations

Our accreditations reflect our world-class engineering capability, safety and quality record, and enable our work with the UK's leading companies.

In order to enable more ports around the UK to begin their Net Zero journey, we have joined forces with Hitachi Energy. Together, we will provide ports with smart energy infrastructure technologies and solutions to ensure resilience and cost efficiency. This partnership combines the strengths of two leading businesses serving the transport industry:

- UK Power Networks Services – respected and innovative engineering, capital finance and experience working in complex and critical infrastructure environments.
- Hitachi Energy – global knowledge and renowned energy infrastructure products and technologies.

### Helping the British Army towards a greener future

UK Power Networks Services is advising the British Army on the road to a greener future following the design and installation of EV charging infrastructure at military sites across the south of England. Up to 80 fully-electric vehicles will operate across five garrisons on Salisbury Plain and Aldershot, allowing soldiers and civilian personnel to travel emission-free. The introduction of EV charging infrastructure is the first step towards achieving a complete transition of the Army's non-combat fleet of vehicles to electric by 2030.

### London City Airport

UK Power Networks Services manages the private electricity network of London City Airport and in 2021/22, we installed the airport's first electric car charging stations. The charging hub includes three ultra-fast 150kW charging units that charge an EV to 80% capacity in as little as 10-15 minutes, providing a range of around 100 miles. The site also includes four 50kW chargers, providing convenient charging for airport users, taxi drivers, local businesses and local residents. The seven chargers allow 10 EVs to charge simultaneously. Supported by BP pulse, the charging points are part of the airport's drive to increase the number of sustainable journeys to and from London City.

### Independent Connections Provider (ICP) contract with Telford Homes in Beckton

In April 2021, UK Power Networks Services won a contract with Telford Homes to connect its new development in Beckton to the local electricity network. This establishes the company as a major player in the ICP market, as the development comprises 267 new homes in East London that UK Power Networks Services will connect to the network.

## Working towards electric flight

In August 2021 our client, Ampaire, a pioneer in hybrid electric aircraft technology, launched the first in a series of test flights between Exeter Airport and Cornwall Airport Newquay. The flights are part of a series of government-backed trials designed to move the UK towards cleaner and greener aviation. UK Power Networks Services is advising Ampaire on how to develop its electrical infrastructure to support electric aviation. We will identify and test aircraft charging solutions that meet all of the requirements, are reliable and resilient, and support the viability of electric aircraft for regional operations.

"Low-emission aircraft are vitally needed on short-haul regional routes to meet the UK's Net Zero objective for aviation. We are developing commercial aircraft now that will begin this revolution in sustainable aviation with service entry planned for 2024."

**Dr Susan Ying**
Senior Vice President of Global Operations at Ampaire

"We are proud to provide the 2ZERO project with our industry-leading expertise in electrical infrastructure. UK Power Networks Services will identify and test an aircraft charging solution ensuring that it meets all of the requirements, is reliable and resilient, and supports the viability of electric aircraft for regional operations."

**Kieran Coughlan**
Head of Strategic Advisory Services at UK Power Networks Services

Our financial performance

# Another strong year

The tables below summarise the key financial information for our three networks regulated by Ofgem.

## Eastern Power Networks plc, serving North London and East Anglia

| £m | 2012/13 | 2013/14 | 2014/15 | 2015/16 | 2016/17 | 2017/18 | 2018/19 | 2019/20 | 2020/21 | 2021/22[2] |
|---|---|---|---|---|---|---|---|---|---|---|
| Turnover | 542.4 | 551.4 | 608.7 | 607.4 | 636.1 | 642.6 | 625.4 | 652.1 | 670.0 | 715.1 |
| EBITDA (Earnings Before Interest, Tax, Depreciation and Amortisation) | 350.1 | 356.9 | 411.6 | 416.8 | 449.3 | 448.0 | 447.3 | 468.2 | 470.6 | 503.6 |
| Tax charge/(credit) | (9.6) | 13.1 | 30.4 | 28.9 | 21.4 | 46.8 | 38.7 | 75.6 | 37.1 | 92.3 |
| Profit after tax | 146.4 | 221.5 | 115.3 | 178.8 | 128.4 | 185.3 | 162.3 | 207.1 | 164.0 | 52.0 |
| Operating cashflow post capex, interest and tax | 32.6 | 4.9 | 16.2 | 19.3 | 59.5 | 60.2 | 23.0 | 7.3 | (80.5) | 212.3 |
| Capital expenditure | 238.1 | 307.1 | 288.1 | 182.9 | 234.9 | 249.2 | 255.5 | 265.2 | 251.1 | 267.0 |
| Net debt[1] | 1,403.0 | 1,438.1 | 1,588.5 | 1,593.5 | 1,629.8 | 1,706.2 | 1,804.3 | 1,880.0 | 1,868.7 | 1,933.0 |
| Regulated asset value (RAV)[2] | 2,196.2 | 2,332.2 | 2,413.5 | 2,436.1 | 2,540.5 | 2,630.4 | 2,705.4 | 2,773.5 | 2,855.6 | 3,130.9 |
| Net debt to RAV ratio | 64% | 62% | 66% | 65% | 64% | 65% | 67% | 68% | 65% | 62% |
| Incentive earned (2012/13 prices) | 17.5 | 14.9 | 28.4 | 24.8 | 24.6 | 20.6 | 26.2 | 27.2 | 27.7 | 26.3 |

## London Power Networks plc, serving Inner London

| £m | 2012/13 | 2013/14 | 2014/15 | 2015/16 | 2016/17 | 2017/18 | 2018/19 | 2019/20 | 2020/21 | 2021/22[2] |
|---|---|---|---|---|---|---|---|---|---|---|
| Turnover | 446.1 | 481.5 | 497.0 | 462.0 | 502.3 | 501.5 | 491.9 | 517.4 | 519.3 | 523.6 |
| EBITDA (Earnings Before Interest, Tax, Depreciation and Amortisation) | 305.9 | 349.9 | 356.2 | 317.7 | 347.4 | 367.4 | 361.5 | 389.4 | 392.0 | 385.8 |
| Tax charge/(credit) | 12.2 | 24.0 | 51.2 | 23.6 | 31.8 | 46.1 | 50.4 | 66.2 | 45.3 | 101.5 |
| Profit after tax | 191.2 | 234.1 | 193.6 | 161.0 | 167.4 | 183.6 | 165.9 | 178.6 | 195.7 | 106.0 |
| Operating cashflow post capex, interest and tax | 56.9 | 63.9 | 49.6 | 127.5 | 65.1 | 48.6 | 9.0 | 6.9 | 27.6 | 138.4 |
| Capital expenditure | 173.1 | 192.2 | 186.6 | 138.3 | 155.7 | 186.9 | 174.8 | 178.3 | 173.3 | 189.4 |
| Net debt[1] | 943.9 | 970.0 | 989.1 | 967.9 | 1,046.6 | 1,067.9 | 1,098.1 | 1,155.7 | 1,184.3 | 1,214.0 |
| Regulated asset value (RAV)[2] | 1,420.5 | 1,468.3 | 1,484.7 | 1,509.7 | 1,581.7 | 1,648.2 | 1,700.0 | 1,746.3 | 1,792.9 | 1,978.0 |
| Net debt to RAV ratio | 66% | 66% | 67% | 64% | 66% | 65% | 65% | 66% | 66% | 61% |
| Incentive earned (2012/13 prices) | 5.8 | 8.7 | 12.7 | 15.7 | 16.2 | 17.2 | 17.7 | 17.7 | 18.2 | 17.3 |

## South Eastern Power Networks plc, serving South London, Kent, East Sussex and parts of Surrey and West Sussex

| £m | 2012/13 | 2013/14 | 2014/15 | 2015/16 | 2016/17 | 2017/18 | 2018/19 | 2019/20 | 2020/21 | 2021/22[2] |
|---|---|---|---|---|---|---|---|---|---|---|
| Turnover | 356.5 | 394.8 | 404.8 | 388.7 | 449.0 | 421.3 | 405.2 | 427.5 | 455.5 | 493.3 |
| EBITDA (Earnings Before Interest, Tax, Depreciation and Amortisation) | 250.4 | 288.0 | 298.6 | 279.0 | 330.1 | 305.2 | 293.8 | 315.0 | 333.3 | 353.2 |
| Tax charge/(credit) | 7.9 | 19.5 | 39.4 | 20.3 | 33.4 | 35.9 | 34.1 | 50.7 | 37.1 | 92.4 |
| Profit after tax | 123.7 | 179.8 | 151.6 | 126.9 | 173.6 | 139.8 | 126.2 | 127.9 | 157.3 | 112.1 |
| Operating cashflow post capex, interest and tax | (15.9) | 48.9 | 24.2 | 45.9 | 73.2 | 41.7 | (9.0) | 5.7 | 40.3 | 51.9 |
| Capital expenditure | 167.3 | 189.6 | 154.6 | 114.6 | 152.7 | 160.3 | 174.9 | 166.7 | 151.7 | 167.5 |
| Net debt[1] | 942.8 | 956.0 | 1,023.6 | 980.9 | 1025.1 | 1,095.5 | 1,146.5 | 1,225.5 | 1,218.0 | 1,240.8 |
| Regulated asset value (RAV)[2] | 1,398.5 | 1,484.5 | 1,514.1 | 1,541.8 | 1,630.2 | 1,703.2 | 1,762.8 | 1,814.5 | 1,862.3 | 2,038.5 |
| Net debt to RAV ratio | 67% | 64% | 68% | 64% | 63% | 64% | 65% | 68% | 65% | 61% |
| Incentive earned (2012/13 prices) | 17.2 | 13.8 | 22.2 | 14.8 | 14.8 | 12.7 | 13.1 | 14.8 | 15.0 | 14.5 |

1 Net debt is as defined within certain of the Company's covenant arrangements.

2 2021/22 RAV presented is provisional at the date the accounts are signed. Discussion with Ofgem may result in RAV being increased or decreased. The prior year comparatives have been restated to reflect the latest agreed position.





Our ownership

# A structure for long-term stability

UK Power Networks is part of the Cheung Kong Group (CKG). Operating in more than 52 countries, CKG has a proven track record in managing high-quality utility companies for the long term. It successfully operates electricity and gas distribution businesses serving communities in Hong Kong, Great Britain, Australia and New Zealand.

## Our shareholding structure

UK Power Networks
**Delivering** your electricity

40%

Cheung Kong Infrastructure

**CK Infrastructure Holdings Limited**
is the largest publicly listed infrastructure company in Hong Kong with diversified investments in energy infrastructure, transportation infrastructure, water infrastructure, waste management, waste-to-energy management and infrastructure-related business. Operating in Hong Kong, Mainland China, the United Kingdom, Australia, New Zealand, the Netherlands, Portugal and Canada, it is a leading player in the global infrastructure arena.

40%

Power Assets 電能

**Power Assets Holdings Limited**
is a global investor in energy and utility-related businesses with investments in electricity generation, transmission and distribution; renewable energy; energy from waste; gas distribution; and oil transmission.

20%

**CK Asset Holdings Limited**
is a leading multinational corporation in Hong Kong with activities encompassing property development and investment, hotel and serviced suite operation, property and project management, pub operation and investment in infrastructure and utility asset operation.

Board of Directors

# Committed to the highest standards

The Board of Directors of UK Power Networks is responsible for agreeing strategy, overseeing performance and discharging certain legal responsibilities. The Board delegates day-to-day responsibility for running the group to the UK Power Networks Executive Management Team, with specialist tasks passed to various Board committees.

## Kam Hing Lam

**Director – UK Power Networks Holdings Limited and certain of UK Power Networks' wholly owned subsidiaries**

Mr Kam has been the Group Managing Director of CK Infrastructure Holdings Limited since its incorporation in May 1996. He is an Advisor of the 12th Beijing Municipal Committee of the Chinese People's Political Consultative Conference of the People's Republic of China. He holds a Bachelor of Science degree in Engineering and a Master's degree in Business Administration.

## Andrew John Hunter

**Director and Chairman – UK Power Networks Holdings Limited and UK Power Networks' wholly owned subsidiaries**

Mr Hunter has been an Executive Director of CK Infrastructure Holdings Limited (CKI) since December 2006 and Deputy Managing Director of CKI since May 2010. He holds a Master of Arts degree and a Master's degree in Business Administration. A member of the Institute of Chartered Accountants of Scotland and of the Hong Kong Institute of Certified Public Accountants, he has over 34 years of experience in accounting and financial management.

## Dominic Chan

**Director – UK Power Networks Holdings Limited and UK Power Networks' wholly owned subsidiaries**

Mr Chan is an Executive Director and the Chief Financial Officer of CK Infrastructure Holdings Limited. He is also an Executive Director of Power Assets Holdings Limited. He is a Fellow of the Hong Kong Institute of Certified Public Accountants, and of the Association of Chartered Certified Accountants, and he is a member of the Institute of Certified Management Accountants (Australia).

## Charles Tsai

**Director – UK Power Networks Holdings Limited and certain of UK Power Networks' wholly owned subsidiaries**

Mr Tsai joined the group in 1987 and was appointed to the Board and Chief Executive Office in January 2014. He is the Chief Executive Officer of Power Assets Investments Limited, a wholly owned subsidiary of the company. He is also a Director or Alternate Director of most of the subsidiaries and certain joint ventures of the company.

He holds a Bachelor of Applied Science Degree in Mechanical Engineering, and is a Registered Professional Engineer and a Chartered Engineer.

## Chi Tin Wan

**Director – UK Power Networks Holdings Limited and certain of UK Power Networks' wholly owned subsidiaries**

Mr Wan has worked for the Power Assets Group since 1978 and was Group Managing Director of Power Assets Holdings Limited from January 2013 to January 2014. He is an Executive Director of Power Assets Holdings Limited and Chief Executive Officer of HK Electric Investments. He holds a Bachelor of Science degree in Electrical Engineering and is also a Chartered Engineer.

He is an Honorary Fellow of the Energy Institute in the United Kingdom, a Fellow of the Institution of Engineering and Technology, a Fellow of the Hong Kong Institution of Engineers and a member of the Engineers Registration Board of Hong Kong.

## Ivan Chan

**Director – UK Power Networks Holdings Limited and certain of UK Power Networks' wholly owned subsidiaries**

Chief Planning and Investment Officer, Mr Chan has been with CK Infrastructure Holdings Limited since September 1999. He is also the Chief Financial Officer of Power Assets Holdings Limited. He has over 30 years of experience in investment, banking and finance. He holds a Bachelor's degree in Science, a Bachelor's degree in Chinese Law and a Master's degree in Business Administration.





## Neil McGee

**Director – UK Power Networks Holdings Limited and certain of UK Power Networks' wholly owned subsidiaries**

Mr McGee is an Executive Director of Power Assets Holdings Limited and the Managing Director of Hutchison Whampoa Europe S.A.R.L. He holds a Bachelor of Arts degree and a Bachelor of Law degree.

## Paul Jeffery

**Sufficiently Independent Director of London Power Networks plc, Eastern Power Networks plc and South Eastern Power Networks plc**

Mr Jeffery was previously a Managing Director and Head of the European Power Utility & Infrastructure Investment Banking team at Barclays. He is also a Non-Executive Director of Southern Gas Networks Limited, Scotland Gas Networks Limited and Saeta Yield S.A.

## Dr Edmond Ho

**Director – UK Power Networks Holdings Limited and certain of UK Power Networks' wholly owned subsidiaries**

Dr Ho joined the UK Power Networks Board of Directors in 2022. As a Director of Hutchison Property Group, he oversees all property development and investment portfolios in the UK. He has delivered numerous prestigious, large-scale, mixed-use developments in London. He holds a Bachelor's, Master's and Doctor's degrees in Science in Engineering and has substantial property development, property management and construction experience in the UK.

## Duncan Macrae

**Director – UK Power Networks Holdings Limited and certain of UK Power Networks' wholly owned subsidiaries**

Mr Macrae is the Head of International Business. He joined CK Infrastructure Holdings Limited in February 2011 and has over 23 years of experience in the infrastructure investment field. He holds Bachelor's and Master's degrees in Philosophy, Politics and Economics and is a member of the Institute of Directors in the United Kingdom.

## Christopher Clarke

**Sufficiently Independent Director of London Power Networks plc, Eastern Power Networks plc and South Eastern Power Networks plc**

Mr Clarke was admitted as a Solicitor of the Supreme Court of England and Wales in 1974. He spent over 30 years practising in Asia and specialised in corporate and regulatory work. He previously served as an Independent Non-Executive Director of two companies listed on the Hong Kong Stock Exchange and is currently a Director of Myanmar Strategic Holdings Limited and a council member of the Royal Society for Asian Affairs.

## Basil Scarsella

**Director – UK Power Networks Holdings Limited and UK Power Networks' wholly owned subsidiaries; Chief Executive Officer UK Power Networks group of companies**

Mr Scarsella has been Chief Executive Officer of UK Power Networks Holdings Limited since its establishment in late 2010. He has a degree in Economics and is a Certified Practising Accountant. He is a Life Member of Football Australia and received the Australian Sports Medal in 2000. In 2003 he became a Member of the Order of Australia (AM) for his services to sport.

## Man Ka Keung Simon

**Director – UK Power Networks Holdings Limited and certain of UK Power Networks' wholly owned subsidiaries**

Mr Man joined CKG in December 1987 and is an Executive Committee Member and General Manager in the Accounts Department of CK Asset Holdings Limited. He is an Alternate Director to Mr Tak Chuen Edmond Ip as well as holding the posts of Deputy Chairman and Executive Director of CK Infrastructure Holdings Limited. In addition, he is a board member of the Community Chest of Hong Kong. Mr Man has over 41 years of experience in accounting, auditing, tax and finance. He holds a Bachelor's degree in Economics and is a member of Chartered Accountants Australia and New Zealand.

Executive Management Team

# An experienced and focused management team

Our Executive Management Team has collective responsibility for running our business and executing our strategy.

### Barry Hatton
**Director of Asset Management**

Barry is responsible for the development and deployment of network and asset strategies for optimising investment and performance. He has over 40 years' experience in the operations and management of electricity distribution networks. Barry is a Chartered Electrical Engineer and a Fellow of the Institution of Engineering and Technology, and has a Master's degree in Technology Management.

### Patrick Clarke
**Director of Network Operations**

Patrick has day-to-day responsibility for managing the distribution of electricity to over eight million homes and businesses across London, the South East and East of England. He joined the industry in 1978 and has risen from an apprentice to an executive director over that period. He holds an Honorary Doctorate in Engineering, an OBE, an MBA and an MA.

### Nirmal Kotecha
**Director of Capital Programme and Procurement**

Nirmal joined in 2011 as Director of Capital Programme & Procurement, having previously held the position of Major Projects Director at the Highways Agency. Before that he led the procurement and capital delivery function at Anglian Water Services. Nirmal holds an MBA and is a Fellow of the Chartered Institute of Purchasing and Supply and the Institution of Civil Engineers.

### Suleman Alli
**Director of Strategy and Customer Services**

Suleman is responsible for Customer Service, Strategy, Regulation and Information Systems at UK Power Networks. He joined in 2015, having previously led the utility network operation practice in the UK for Accenture. Suleman has 20 years' utilities experience, delivering business transformation, company restructures and operational performance improvement across gas, electricity and water sectors. He holds a BSc (Hons) from the London School of Economics and Political Science.

### Mark Adolphus
**Director of Health, Safety, Sustainability and Connections**

Mark is responsible for UK Power Networks' Health, Safety, Sustainability and Connections business. He joined London Electricity in 1992 as an engineering graduate trainee and has enjoyed a diverse career across a number of operational, engineering and commercial roles. Mark is a Chartered Electrical Engineer and holds a Master's degree in engineering business management from Warwick Business School and a degree in Electrical Engineering from the University of Leicester.

### David Mitchell
**Director of UK Power Networks Services**

David leads UK Power Networks Services. He is a chartered electrical engineer who joined the organisation in 1980 as an apprentice, achieving a degree in Electrical Engineering at Southampton University and an MBA at Brighton University.

He has held several senior posts within the company, most recently as Head of Client Delivery overseeing long-term airport and military contracts as well as delivering major infrastructure projects.

### Jenny Harrison
**Director of Finance**

Jenny joined UK Power Networks in 2017. Prior to this, she was Director of External Reporting at BT Group. Jenny spent almost 20 years in various 'Big Four' accounting firms, specialising in audit and assurance with the energy and utilities sector as well as sustainability. Jenny is a member of the Institute of Chartered Accountants in England and Wales and has a BA in Classics from Oxford University. She is a trustee of a Leeds University-based sustainability charity, United Bank of Carbon.

### Andrew Pace
**Director of HR, Legal and Company Secretary**

Andrew joined UK Power Networks in January 2018 and is responsible for HR, Legal and the Company Secretary function. He has over 25 years' HR leadership experience, predominantly in the construction and infrastructure sectors. Andrew held various HR leadership roles with John Laing, Rio Tinto and Balfour Beatty. Prior to joining UK Power Networks, Andrew was Executive Director, construction and infrastructure at Morgan Sindall.



# Key contacts

**General enquiries**
0800 029 4285

**Emergencies or power cuts (24 hours a day)**
Free power cut helpline 3-digit number:
**105 or 0800 31 63 105**
Please note this number is free to call from mobile phones

**Text message updates during a power cut**
To keep updated if you have a power cut in your area text **'Power'** followed by your postcode, e.g. Power IP3 6QX to 80876

**Text Relay**
We offer a 24-hour Text Relay service for customers who are deaf, hard of hearing or have any other communication difficulties. For more information, visit:
**www.ukpowernetworks.co.uk**

**Connection services**
0800 029 4280

**Our unregulated business**
services@ukpowernetworks.co.uk

**Media enquiries**
0330 159 1712

A full list of our contact details can be found at:
**www.ukpowernetworks.co.uk**


**Visit our Annual Review website:**
annualreview2022.ukpowernetworks.co.uk

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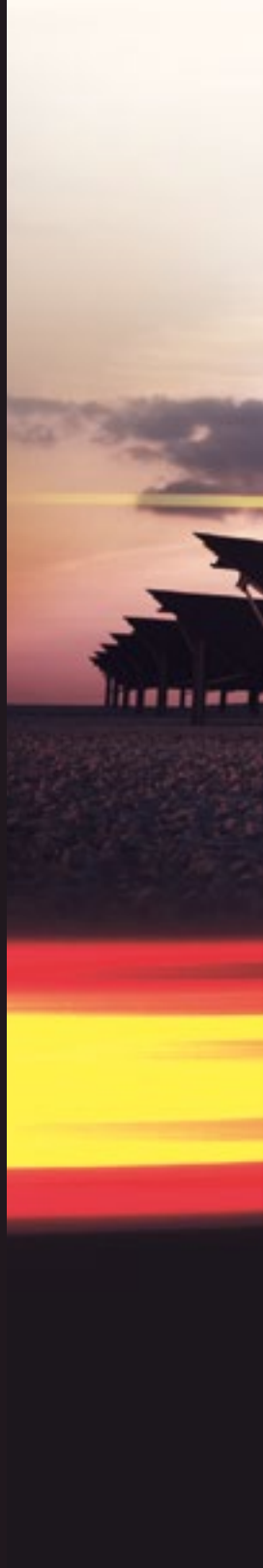
Delivering your electricity



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