Welcome to the Central London Plan Update 2020

We made 77 commitments in our RIIO-ED1 business plan, one of which was to publish an annual update on the progress of the plans we made for improving the Central London Network. This report details what we have achieved over the past year.

Our vision:
To be consistently the best-performing Distribution Network Operator in the UK within an agreed set of values

We will do this by delivering our RIIO-ED1 output commitments and business targets across the three aspects of our vision, being:

**An employer of choice**
- The safest – with an exemplary safety record
- A place where people love to come to work
- Embracing diversity
- An appropriately skilled workforce for both today and the long term

**A respected and trusted corporate citizen**
- The most reliable networks
- The most satisfied customers
- The most innovative
- The most socially and environmentally responsible
- Ensure we meet the needs of our vulnerable customers, both now and in the future
- Enable the net-zero transition for all
- The leading UK Distribution System Operator

**Sustainably cost-efficient**
- The lowest cost electricity distributor for our customers
- Deliver on our commitments in a collaborative way

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I am pleased to present the fourth annual update on the progress of our Central London Plan. I am proud to say that 2019 was an outstanding year, our best ever year for performance.

We have seen a 19% reduction in the number of power cuts in Central London over the last five years and a 60% reduction in their duration. This is thanks to our investment in the network and its resilience, as well as our focus on improving operational response. Our Central London depot is a key contributor to this strong performance, where staff are available 24 hours a day, seven days a week, ready to respond to any faults occurring in the Central London Area. Our customer satisfaction scores reflect this great progress; we achieved an average score of 90% for the Central London Area, which is a significant improvement from 82% in 2014.

London is constantly evolving and growing, with the number of customers we serve in the Central London Area increasing by 12% since 2014. That is why we need to ensure that we are able to support future growth in the capital. One of the ways we are doing this is by building four new large substations in areas where forecast demand is expected to increase by 300 MVA, which is the equivalent of powering 150,000 average homes. We have already successfully completed one of these substations and it is now providing greater capacity to the Kings Cross area. You can read about the progress we are making on the other three substations in this report.

Ensuring that our network is resilient, reliable and able to respond to future growth means we can facilitate the transition to a net-zero carbon economy and help to support the Mayor of London’s environment and transport strategies for the city.

I hope you will find this update informative and useful. We welcome feedback on the work we are doing and this report.

Basil Scarsella
Chief Executive Officer
Background to the Central London Plan

The Central London Area is the global financial hub of the United Kingdom and contains some of the world’s most important political, entertainment and tourist regions. We recognise what a great responsibility it is to deliver power to customers in the Central London Area. That is why our plan focuses on delivering the infrastructure that will improve the network.

As we developed our business plan for RIIO-ED1, we engaged with our key stakeholders to find out what is important to them. Our Central London Plan reflects the three main priorities that emerged from these discussions.

- Increase capacity to support growth
- Improve operational response
- Invest in network resilience

This report provides an update on our progress in these three areas. The maps show the geographic areas in the Central London Area, by postcode and by borough, and the locations of the new substations that will increase our network’s capacity.

The Central London Area serves approximately 182,000 customers as well as the numerous people visiting and working in the area.

Markers show where the new substations to increase capacity will be located.
As London continues to develop and grow, so does the need for an increase in network capacity.

As part of our plan to increase capacity to meet the future growth expected in Central London, we are delivering four new substations, located where demand is expected to rise over the coming years. These new large projects will not only provide a combined additional 300MVA of capacity, but also the electrical infrastructure needed to support growth in Central London.

300MVA is what is required to power 150,000 average homes.
Increasing capacity to support growth

**Grafton Way**

**Background:**
Grafton Way is a part of our City Road/City of London Regional Development Plan. We planned to build a new substation in the Kings Cross area that will provide an increase in capacity of 86 MVA. This extra capacity will allow load to be transferred from the nearby Back Hill substation.

**Progress update:**
We completed the project in December 2018 and the new substation is now fully operational, with customers in the area connected to the new supply.

**Stewart’s Road**

**Background:**
We proposed the building of a new substation to facilitate the development of new planning proposals in the Vauxhall/Nine Elms/Battersea area on the south bank of the Thames.

This substation will facilitate:
- Power to 16,000 new homes;
- Power to an extension to the London Underground Northern Line; and
- Regeneration of Battersea Power Station

**Progress update:**
We completed the construction of the substation building, and the mechanical and initial electrical fit outs, in 2019, and we have successfully installed two transformers and three sections of switchboard. We also installed 24km of cable for the new circuits in the existing tunnel. A number of operational factors on the existing networks mean that we now expect to complete the new substation in June 2020.

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<thead>
<tr>
<th>Capacity proposals</th>
<th>Forecast completion date</th>
<th>Forecast cost*</th>
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<tbody>
<tr>
<td>1 86 MVA</td>
<td>Completed</td>
<td>£13.2m</td>
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<tr>
<td>2 86 MVA</td>
<td>June 2020</td>
<td>£40.7m</td>
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* In line with regulatory reporting guidelines, the forecast costs here are only the direct costs of delivering the project.
# Increasing capacity to support growth

## Wood Lane

**Background:**
The London Borough of Hammersmith and Fulham and the Greater London Authority have agreed a new White City Development, with mixed office, residential and community use. The site is close to the BBC Television Centre and Westfield shopping centre. A new substation in the White City area was proposed to support the new development.

**Progress update:**
We have completed negotiations regarding the site and have begun the construction of the substation. In November 2019 we built a new 11kV switchboard and it is ready to be commissioned. Two new transformers arrived in December 2019 and we will install coolers and pipework early this year. The cable route is 85% complete and we aim to complete all open cut and tunnel sections by March 2020. We will install new circuit breakers at the supply point in May 2020 and will complete this stage, along with associated cables, by August 2020. The electrical fit out and commissioning will begin in early 2020, and we expect to complete that by January 2021.

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<th>Capacity proposals</th>
<th>Forecast completion date</th>
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<tr>
<td>43 MVA</td>
<td>Jan 2021</td>
<td>£16.1m</td>
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## West End

**Background:**
London's West End is one of the most economically important areas of London. It encompasses the entertainment districts of Leicester Square and Covent Garden, as well as shopping districts on Oxford Street, Regent Street and Bond Street. We are developing plans to construct a new substation to provide additional forecast capacity for the area.

**Progress update:**
We completed a land search to identify sites for the substation and found a number of feasible solutions. We have now identified the location that we intend to develop. We are having detailed discussions with the landowner of this site to ensure a safe construction environment that will have minimal impact on the local area. A feasibility study for the tunnel development is currently underway to identify the most cost-effective method of supplying the new site from the nearest Grid Supply Point. The current and future demand in the West End area will continue to be met from the existing capacity at the three substations that supply the area while we establish this new substation.

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<th>Capacity proposals</th>
<th>Forecast completion date</th>
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<tr>
<td>86 MVA</td>
<td>2024</td>
<td>£36.5m</td>
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*In line with regulatory reporting guidelines, the forecast costs here are only the direct costs of delivering the project.
Improving operational response

A reliable power supply is vital for an area that is as sensitive and economically significant as Central London.

To take account of this, our RIIO-ED1 business plan proposed establishing an operational depot specifically for the Central London Area, with teams available to respond to problems on the network 24 hours a day, seven days a week. The depot has been a great success in helping significantly reduce response times.
Improving operational response

Shorts Gardens

Our Central London office is the base for over 100 members of staff who are ready and able to respond to any high or low voltage fault from its central location near Covent Garden. You can see below how performance has improved since we established the depot.

- **Reducing time to arrive on site:**
  The office is staffed 24 hours a day, seven days a week, so there is always a qualified member of staff available to respond to a fault. Before we opened this depot, we would have to call engineers out from their home, which could be some distance from Central London.

- **Reducing the number and duration of power cuts in Central London:**
  We have dedicated teams, working in shifts, that are responsible for maintaining the LV interconnected network. In addition, the introduction of Ultra High-Speed fuses onto the network means that teams can work safely on the network without having to turn off the supply to customers. This reduces both the number and duration of power cuts.

- **Reducing the longer power cuts:**
  Mobile stores delivering to site means that our engineers can get to work more quickly, instead of needing to travel to depots to collect parts and materials. This means that we are more likely to be able to ensure that our customers are not without power for an extended period of time.

- **Improvement in customer satisfaction:**
  All of the measures that we have put in place to improve network reliability in the Central London Area have been reflected in our customer satisfaction scores. In addition, the teams ensure that information relating to power cuts is provided to customers as soon as possible.

19% fewer customers were affected by a power cut in Central London compared with 2014 and the duration of power cuts is down by 60% since then.

Customer satisfaction scores are currently at 90% for our response when customers experience a power cut, compared to 82% in 2014.

**LPN overall network**

The Customer Interruption (CI) and Customer Minutes Lost (CML) targets set by Ofgem for the whole London network were set more tightly to reflect the performance improvements expected as a result of establishing our Central London depot. Since 2013/14, when the Central London depot was opened, CIs in London have improved by 33% and CMLs by 34%.

- CI (Ofgem target)
- CML (Ofgem target)

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<td>Ofgem targets</td>
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<td>CML</td>
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<tr>
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- CI (Ofgem target)
- CML (Ofgem target)
Investing in network resilience

Investment in increasing the resilience of our Central London Network is key to ensuring that our performance continues to improve.

The complex design of the Central London Network contributes to its resilience, but it also makes the task of operating the network more complicated. By improving the operation of the more complex areas of the network, we will improve performance. We are implementing state-of-the-art control systems and new network designs. These will contribute to making the network more resilient. We also place a great focus on linkbox and substation inspections, in order to ensure the network is not only reliable, but also safe.
Investing in network resilience

Increasing resilience of interconnected groups

The Central London Network is unique in the UK in that it operates Low Voltage interconnected networks, which means that we can supply power to customers from multiple High Voltage supply points.

The advantage of this design is that it helps us support large amounts of concentrated electricity demand and we can continue to provide power to customers even when there is a fault on the High Voltage network.

The design of these networks has evolved over time to improve safety. In order to continue to develop the design of these networks, we have created a new concept using unit protection switchgear. This new design aims to reduce the complexity of operating the Low Voltage network while ensuring that no supply is lost in the event of a High Voltage circuit fault. This will improve safety and avoid customer interruptions.

Update on new equipment testing:

- We have nearly completed the training of operational staff in Central London on the use and operation of the new switchgear;
- The new switchgear was delivered at the end of 2019;
- We have undertaken 3D scanning of 12 transformer chambers in the West End and worked with our operational team to establish equipment sizes and protection requirements for the new switchgear;
- Further practical assessments of space requirements in transformer chambers where required is in place;
- We are finalising protection strategy for the HV unit protection concept;
- We intend to propose a re-assessment of spare ducts for fibre optic cable routes;
- We are considering two substation sites for a trial of the equipment in 2020; and
- If the trial is successful, we will roll out the equipment to other sites.

Linkbox and substation inspections

Linkboxes allow us to rearrange the Low Voltage network by providing links between multiple electrical cables. They are installed under covers in the pavement and are operated by inserting or removing either solid links or fuses. We inspect all linkboxes in Central London once a year, to check for defects. We have installed a protection blanket in every linkbox in Central London (where access allows). The protection blanket acts as a buffer between the bell cover and the footway cover. This reduces the risk of the footway cover lifting in the event of a fault.

We also check our substations annually in order to spot and fix defects, to prevent them developing further. These checks contribute to the improvement of the network’s availability and reliability.

125 linkboxes have been replaced in 2019

A protection blanket has been installed in every linkbox in Central London* where access allows

2,938 linkboxes have been inspected in 2019

3,260 substation inspections have been carried out in 2019

* where access allows

UK Power Networks
Central London Plan Update 2020
Key contacts

General enquiries
0800 029 4285

Emergencies or power cuts
(24 hours a day)
Free power cut helpline three-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

Media enquiries
0330 159 1712

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