

# Central London Plan Update 2023

Towards a net zero energy future



# Welcome to the Central London Plan Update 2023

One of the 77 commitments in our RII0-ED1 business plan was to publish an annual update on the progress of the plans we made for improving the Central London Network. This report is the result of that commitment and it details what we have achieved over the RII0-ED1 period.

## In this report

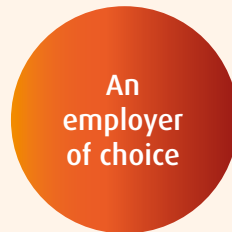
Chief Executive’s introduction	02
Background to the Central London Plan	03
Increasing capacity to support growth	04
Improving operational response	07
Increasing resilience of interconnected groups	09



## 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 both our business targets and, where appropriate, setting targets which go beyond our sector for the three aspects of our vision:



The safest – with an exemplary safety record

An organisation that employees are proud to work for

Embracing diversity

An appropriately skilled workforce for both today and the long term



The most reliable networks

The most satisfied customers

The most innovative

The most socially and environmentally responsible

Ensure we meet the needs of our customers in vulnerable circumstances, both now and in the future

Enable the net zero transition for all

The leading UK Distribution System Operator



Be the lowest cost electricity distributor for our customers

Deliver on our commitments in a collaborative way

## Our values:

Integrity – Respect – Continuous improvement – Responsibility – Unity – Diversity and inclusiveness

# Chief Executive's introduction

I am pleased to present the final update on the progress of our Central London Plan over the RII0-ED1 period.

As part of our RII0-ED1 business plan we made a commitment to report annually on the progress of the plans we made for improving the Central London Networks.



As RII0-ED1 comes to a close, I am proud to say that we have made great progress in improving the Central London network over the RII0-ED1 period.

2022 was our best-ever year for performance, and London has maintained its position as the most reliable network in the country. We have seen a 57% reduction in the number of customers interrupted in Central London over the last eight years and a 73% reduction in the average length of the interruptions. The creation of our Central London depot has contributed greatly to the improvements we have been able to make to our reliability, as well as customer service. Customers in the Central London area scored us 91% on average for customer satisfaction in 2022. You can find more information on the performance improvements we have delivered on page 8.

To support future growth in the capital, we set ourselves the task of building four new large substations in areas where forecast demand was expected to increase. We have completed two of these – Grafton Way and Wood Lane – both of which are already providing their surroundings with greater capacity. A third new substation at Stewart's Road is built and will be fully operational later this year.

In the West End area, a number of innovative and smart solutions have helped us to meet our capacity requirements, negating the need to build a new substation. We will continue to monitor capacity in the area and will revisit the need for an additional substation in the future if additional demand materialises. More detail on these projects can be found on page 4.

Our proposal to install unit protection switchgear has been superseded by technological developments – notably the commencement of our Constellation innovation project. We intend to implement this world-first innovation once the project completes.

This is the last report we will make on the projects that were part of our RII0-ED1 schemes. You can find out more about the plans we are proposing for RII0-ED2 in London in our [business plan](#).

A handwritten signature in black ink, appearing to read 'Basil Scarsella'.

**Basil Scarsella**  
Chief Executive Officer

91%

average customer satisfaction score for the Central London Area

9.0

Customer Minutes Lost for the Central London Area in 2022 – our best ever performance

# Background to the Central London Plan

The Central London Area is the global financial hub of the United Kingdom. It contains some of the world’s most important political and commercial centres, and is home to world-leading cultural, entertainment and tourist destinations. 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.

The Central London Area serves approximately

# 185,000

customers as well as the numerous people visiting and working in the area

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

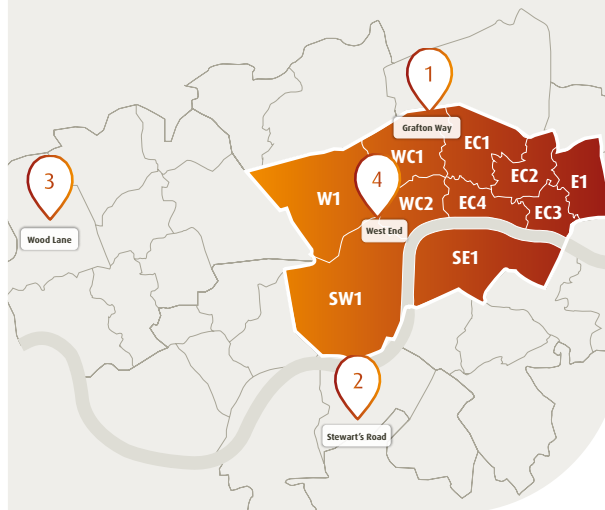
**Increase capacity to support growth**

**Improve operational response**

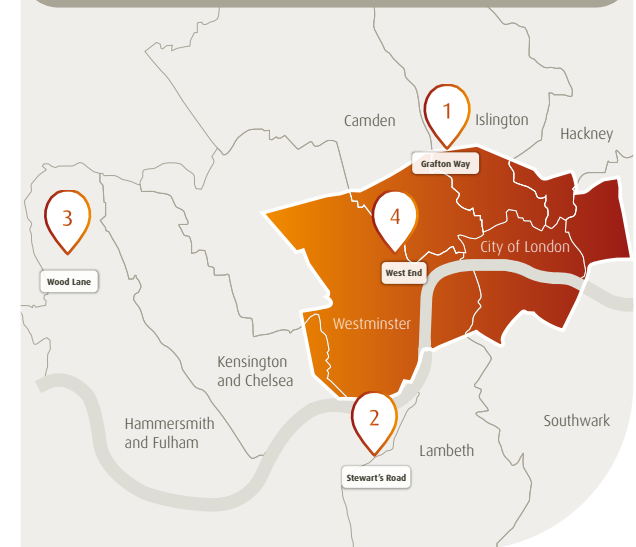
**Increasing resilience of interconnected groups**

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.

Overview of the Central London Area by Postcode



Overview of the Central London Area by Borough



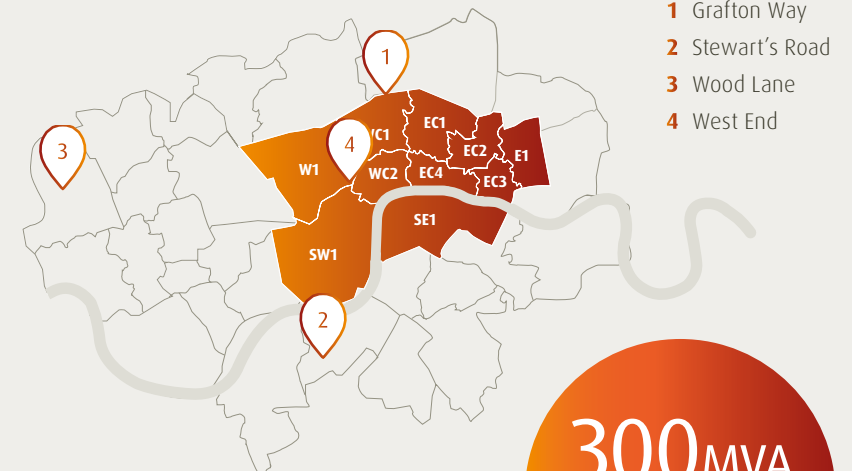
 Markers show where the new substations to increase capacity will be located.

# Increasing capacity to support growth



## As London continues to develop and grow, so does the need to increase the network's capacity.

As part of our plan to do this in order to meet the future growth expected in Central London, we proposed to deliver four new substations located where demand is expected to rise. Two of these, Grafton Way and Wood Lane, have already been completed and Stewart's Road is due to be fully operational later this year. In the West End area we have utilised smart solutions that has enabled the need for capacity to be met and negated the need for a new substation at this point in time. These new substations will not only provide a combined additional 300MVA of capacity, but will also ensure that we have the electrical infrastructure needed to support growth in Central London.



- 1 Grafton Way
- 2 Stewart's Road
- 3 Wood Lane
- 4 West End

**300MVA**  
is what is required to power  
150,000 average homes

# Increasing capacity to support growth



Capacity proposals



Forecast completion date



Forecast cost\*

\* In line with regulatory reporting guidelines, the forecast costs here are only the direct costs of delivering the project

1

## Grafton Way



86 MVA



Completed



£13.2m

### Background

Grafton Way is a part of our City Road/City of London Regional Development Plan. We have built a new substation in the Kings Cross area that provides an increase in capacity of 86 MVA. This extra capacity allows 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.

2

## Stewart's Road



86 MVA



Dec 2023



£40.7m

### Background

We have built 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 have successfully energised the second transformer and have started work on our 11kV network reconfiguration to facilitate load transfers from other major substation sites within the local geographic area. We continue to make progress with our network reinforcement at Wimbledon and once this is completed, it will mean that the Stewart's Road site will be able to operate at full capacity.

# Increasing capacity to support growth



Capacity proposals



Forecast completion date



Forecast cost\*

\* In line with regulatory reporting guidelines, the forecast costs here are only the direct costs of delivering the project

3

## Wood Lane



43 MVA



Completed



£17.9m

### Background

The London Borough of Hammersmith and Fulham and the Greater London Authority are working together on 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 will support the new development.

### Progress update

We completed the project in October 2021 and the new substation is now fully operational, with customers in the area connected to the new supply.

4

## West End



86 MVA



Not fixed



£36.5m

### Background

London's West End is one of the most important areas of London in terms of the economy. It also encompasses the entertainment districts of Leicester Square and Covent Garden, as well as shopping districts on Oxford Street, Regent Street and Bond Street. As part of our ED2 plans we identified a requirement to develop a new substation to provide additional capacity that the area was forecast to need.

### Progress update

We have explored innovative and smart solutions that would enable the need for capacity to be met as well as lowering costs to customers over the next five to ten years. To that end, we have secured flexibility resources in the area and completed projects on adjacent sites to ensure their resilience. An example of this is the transformer replacement project at Leicester Square which has provided an increase in capacity to the area. Based on this and the latest forecasts of growth from our Distributed Forecast Energy Scenarios, it is our current view that we will not need to build a new West End substation until after 2028.

# 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 RII0-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. We did so, and the depot has been fully operational since 2014 and continues to be a vital factor in our significantly reducing response times.

8.1

customers experienced a power cut (out of 100 customers connected to the network) which is a 57% improvement since 2014



# Improving operational performance

## Shorts Gardens

Over 100 members of staff work from our Central London office and thanks to their central location near Covent Garden, they are ready and able to respond to any high or low voltage faults. 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 are always qualified 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.

The time taken to arrive on site in 2022 was an average of only 43 minutes. This is a **58% reduction since 2014**, when it took an average of 102 minutes to arrive at site.

### 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.

The number of customers whose power supply was interrupted has **reduced by 57%** in Central London compared to 2014. The duration of power cuts is down **by 73%** over the same period.

### Shortening the longer power cuts:

Mobile stores delivering to the site of a fault means that our engineers can start work more quickly, instead of needing to travel to depots to collect parts and materials. This means that we are able to reduce the amount of time our customers are without power.

Our performance in this area continues to be outstanding, with **not a single customer** being off supply for longer than 12 hours in 2022, compared to 384 in 2014.

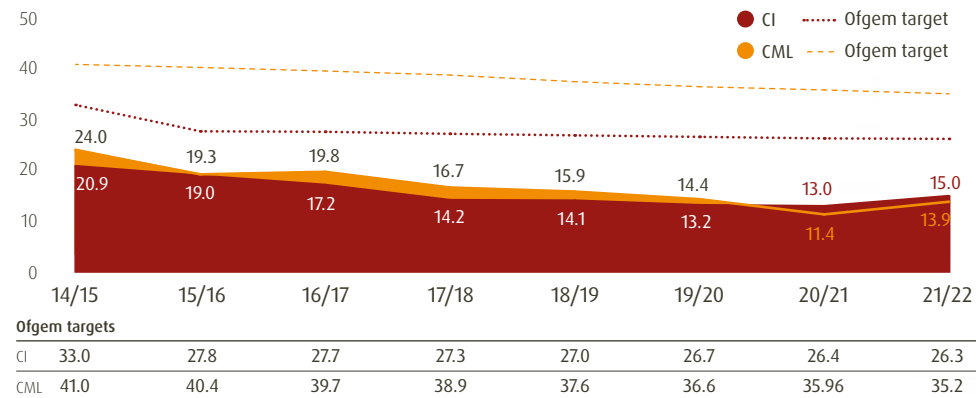
### Improvement in customer satisfaction:

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

**Customer satisfaction scores are currently at 91%** 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 more challenging, to reflect the performance improvements expected as a result of establishing our Central London depot. From around the time the Central London depot was opened in 2014, CIs in London have improved by 30% and CMLs by 53% since 2014/15.



# Increasing resilience of interconnected groups



**The Central London network is unique in the UK in that it operates low voltage interconnected networks; this means we can supply power to customers from multiple high voltage supply points.**

The advantage of this design is that it helps us support high levels 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.

As part of our R110-ED1 business plan we proposed to install unit protection switchgear to reduce the complexity of operating the low voltage network. During the early stages of R110-ED1, we completed the training of operational staff and undertook scanning of transformer chambers to establish equipment sizes needed for the new switchgear.

Over the course of the price control, we have explored innovative solutions and in 2021 we launched a major innovation project called Constellation. Constellation is a world-first innovation project that will see powerful computers installed in a series of substations, turning them into smart substations.

This will enable each local substation to analyse millions of data points on how the network is running and reconfigure the network based on specific conditions.

Optimising our substations in this way means we can safely release more capacity and enable more renewable energy to connect at a lower cost. This saves customers money and helps the environment at the same time.

To ensure we deliver an efficient, sustainable, and cost-effective solution for our customers, we will apply the learnings from Constellation when it is due to complete at the end of 2025, to the Central London area.

# 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](http://www.ukpowernetworks.co.uk)

## Media enquiries

0330 159 1712



A full list of our contact details can be found at:

[www.ukpowernetworks.co.uk](http://www.ukpowernetworks.co.uk)



**UK Power Networks Holdings Limited**

Registered in England and Wales No. 7290590

Registered office: Newington House,

237 Southwark Bridge Road, London SE1 6NP

[www.ukpowernetworks.co.uk](http://www.ukpowernetworks.co.uk)

UK Power Networks Holdings Limited is the holding company of the companies in the UK Power Networks group of companies.