

# Maintaining excellent reliability

Our London network remains the **most reliable** electricity distribution network in Great Britain

Customers are entitled to expect us to do our best to keep the lights on and to do so safely and carefully. Interruptions, which may be planned or not, are nonetheless inevitable, for a range of reasons. It is our responsibility to make sure that power cuts are rare and, when they do happen, that they are as short as possible. The two ways in which network reliability is measured reflect this position: we are judged on the number of **Customer Interruptions (CI)** and the number of **Customer Minutes Lost (CML)**.

Improvements to our operations have made significant contributions to reductions in the frequency and duration of power outages. Automation and converting manual switches enable them to be operated remotely from a central point are recurrent themes in our advancement in this field. Both contribute to isolating faults and restoring supplies remotely, avoiding delay while an engineer travels to the site. We now have a Primary Outage Restoration Tool (PORT), which automatically switches high-voltage circuits from an affected primary substation to a nearby one. During the 'Beast from the East' storm in February 2018, PORT ran 14 times and this kept many of our customers' lights on, even though the network was hit by extreme weather.



“ The LiDAR project highlights how well various remote sensing technologies can be combined to collect a holistic data set for a utility. Geospatial technology such as wire detection and pole modelling provides the toolkit to allow us to detect and prioritise the various vegetation-related risks, making them actionable to our client. ”

Kevin Jacobs, Managing Director at NM Group



## LiDAR

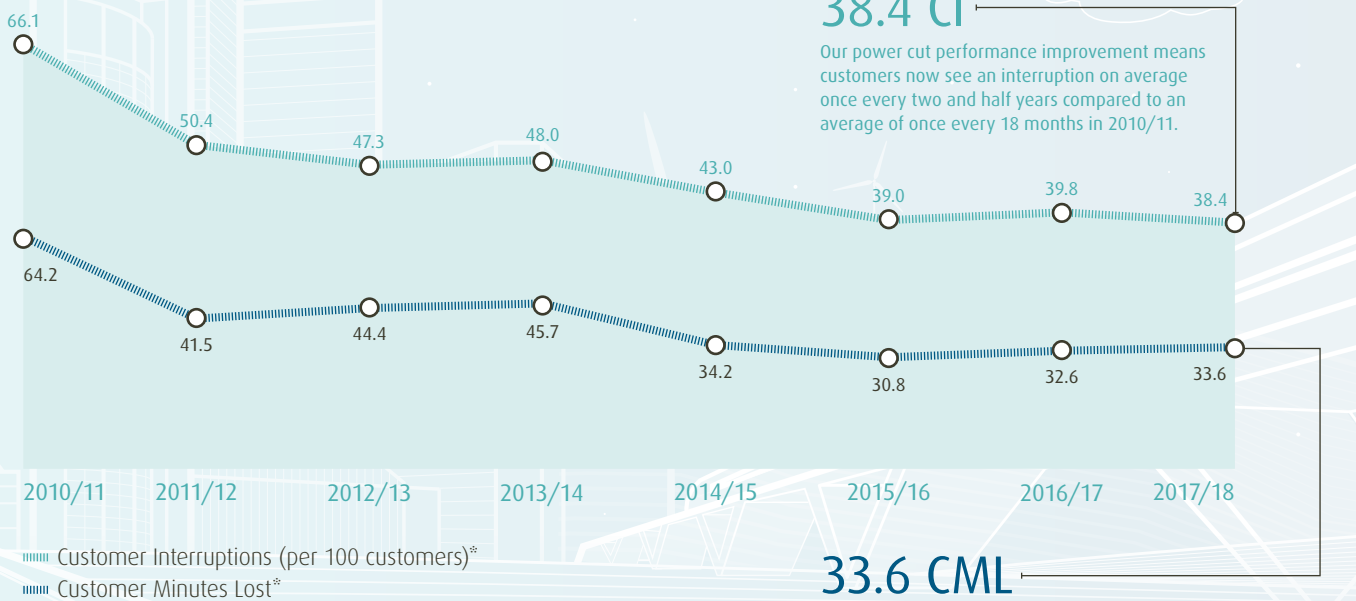
Light Detection and Ranging (LiDAR) uses laser-frequency light to detect objects and distances in 3D. We use LiDAR to identify trees and other vegetation near our overhead power lines that could cause power cuts. That way we can identify those trees and shrubs that pose the most risk, and remove them.



## Our performance in numbers

Customer Interruptions (CI) are the number of customers interrupted per 100 customers on our network.

Customer Minutes Lost (CML) is the average length of time customers are without power, for power cuts lasting three minutes or longer.



\* Figures are a weighted average of the three licence areas and exclude exceptional events.

# A closer look at UK Power Networks

2017/18 was another strong year for UK Power Networks. Our performance is built on the winning combination of safety, customer satisfaction, network reliability and value for money, all of which have improved significantly since we started in business in 2010/11. We also want to be a great place to work, and our 'most improved' position at number 11 of The Sunday Times 25 Best Big Companies to Work For is an achievement we are particularly proud of as it is based on employees' survey comments.

Our people across the whole of UK Power Networks work together to deliver this first-rate performance. We remain committed to continuing to improve our service and innovation is vital to this. We continue to invest considerable resources in finding new ways to make our service cheaper, greener, safer or more reliable.



## Network reliability



We continually invest in our networks in order to improve the quality of supply for our customers, both during extreme weather and in the normal course of events. It is a key focus for us to reduce the amount of disruption to our customers, in terms of the number of power cuts and the amount of time for which they are without power. To address this, we are pursuing an Investment strategy of increasing both automation and remote control of our switches across the region.

We were the first company to deploy an automatic power restoration system on our London network. This technology is now also embedded in the operation of our Eastern and South Eastern networks, where it has been a key contributor to our performance improvement. To increase customer benefits still further, we have a major investment programme across the regions to install or retrofit over 1,000 additional automatic remote-control switches. These will replace the manual switches that require an engineer to attend a fault.

### Investment strategy

As well as focusing on the automation and remote capabilities of the switching network, we are also undertaking a programme of more general asset replacement across the networks. For example, small section conductors on the overhead network are particularly susceptible to damage in storm conditions or high winds. As part of our Investment strategy, we have a rolling programme to replace these conductors wherever it is practical to do so.

### A tailored approach for Greater London

The sprawling development of London means that it is covered by parts of our Eastern (EPN) and South Eastern (SPN) networks as well as the London network (LPN). The urban nature of this customer base within the M25 means that, unlike most networks, the low voltage (LV) part of the infrastructure accounts for the majority of Customer Minutes Lost. This is in part a result of the extensive remote-control capability that we now have on high-voltage networks. We have undertaken an analysis of the LV network, looking at pockets of Greater London where we have higher-than-normal levels of CI and CMLs and have initiated a programme of LV schemes to improve reliability. This programme aims to drive performance improvements by replacing unreliable assets and/or reconfiguring the network.

## Storm David

The largest weather event to affect our networks in 2017/18 was Storm David, in January 2018. Its impact on our network was similar to that of Storm Doris the year before.

