electricity north west

Bringing energy to your door

Working to deliver **innovative solutions** to build **reliable networks** so we can provide an **affordable and sustainable service** for our customers

The future

Here at Electricity North West we are preparing for the low carbon future in a number of ways:

- Developing new flexible contracts to benefit our customers
- Continually taking steps to reduce energy usage and encourage our customers to use electricity more efficiently
- Striving to improve how we manage our network with new research, innovation and technology
- Developing smart grid technologies to enable us to intelligently manage our network to meet future demand in the best way possible.

Ofgem has granted Electricity North West funding from the £500 million Low Carbon Networks Fund to develop crucial knowledge and expertise which can be shared across the electricity industry

LCN Fund
Low Carbon Networks

C2C

Capacity to Customers

Our ground-breaking Capacity to Customers (C2C) project combines the use of new technology with innovative commercial contracts. This could increase the amount of electricity we can transmit using our existing assets and could form the blue-print for the UK's future electricity network. C2C:

- Releases previously untapped network capacity for everyday use
- Enables customers to make savings by changing the way they use electricity
- Reduces the need for network reinforcement
- Helps meet the UK's tough low carbon targets.

"We are preparing for the low carbon future"

CLASS

Our Customer Load Active System Services (CLASS) project is trialling a range of innovative techniques to manage electricity consumption by controlling voltages on the network - without customers noticing a difference. CLASS:

- Makes it easier to adopt low carbon technologies onto the electricity network
- Avoids or defers the cost and disruption of expanding our network of overhead lines, underground cables and substations
- Keeps costs down for all electricity customers
- Provides an alternative technique for National Grid to offer response and reserve services.

CLASS

Customer Load Active System Services

Smart Street

Smart Street will trial new technologies to optimise network performance while maintaining voltages within statutory limits.

The aim is to make our networks and customers' appliances perform more efficiently and to make it easier to adopt low carbon technologies onto the electricity network. Smart Street provides:

- Increased network capacity
- Easier connection of low carbon technologies
- Reduced carbon emissions
- Reduced reinforcement costs
- Reduced overall energy consumption
- Lower bills for customers.

First Tier

Fault current active management (FCAM)

Increased generation on the electricity network will lead to much larger fault currents which means we need to reinforce the network to protect against fault level issues.

FCAM is trialling the innovative use of existing protection assets as an alternative to traditional methods. Through modelling and measurement we will compile a picture of how fault currents vary across the network and over time.

Combined online transformer monitoring (COLM)

Our latest First Tier project is the trial of new advanced online transformer monitoring solutions consisting of a dissolved gas analysis unit combined with a partial discharge monitoring unit.

We will monitor the condition of six transformers which have their usable life extended by oil regeneration and refurbishment.

"Keeping costs down for all electricity customers"

Low voltage integrated automation (LoVIA)

LoVIA builds on elements of our voltage management and network solutions projects.

Smart joints installed at mid and end points of low voltage cables measure voltages which are sent back to the distribution substation and assessed. Commands are then sent to the tap changer to regulate the voltage.

Low voltage protection and communications (LV PAC)

The increased use of demand and generation low carbon technologies means that electricity networks will become more complex and need more sophisticated protection in the future.

Our LV PAC project uses the WEEZAP which we have developed further to improve communication links and modify the protection remotely.

The future

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Low voltage network solutions

This three-year project aimed to understand how our low voltage network performs now, so we know how to accommodate low carbon technologies for our customers in the future.

The smart fuse

The award winning 'Bidoyng' smart fuse is a revolutionary step forward in intelligent automation, designed to remove intermittent faults from the low voltage network.

Now that the project is complete, several hundred smart fuses are installed across our network to help restore supplies to our customers every day.

Voltage management on low voltage busbars

This project investigated a range of techniques which can be used to manage voltages on the low voltage network.

The results clearly demonstrate that capacity can be released on the low voltage network by actively managing voltage as load and generation change throughout the day.