ADVERTORIAL

Creating efficient distribution networks

By combining innovative technology with existing assets, Electricity North West's 'Smart Street' project aims to make networks and customers' appliances perform more efficiently and make it easier to adopt low carbon technologies onto the electricity network.

electricity north west

Bringing energy to your door

Electricity North West, the company who operates the electricity network in the North West of England, is leading the way in developing smart solutions to meet the UK's future energy challenges. One of their latest low carbon projects looks at innovative ways of maximising the use of the existing electricity network by adapting established technology and leveraging learning from their previous projects, Capacity to Customers and CLASS.

Smart Street will trial new voltage control techniques to configure and optimise voltage on the network in real time. These techniques known as conservation voltage reduction will minimise the impact of low carbon technologies, while maintaining voltage within statutory limits.

The project challenges current operational practices and demonstrates how to optimise high voltage (HV) and low voltage (LV) electricity networks, using the most advanced technology developed for LV network management. This will demonstrate that a network operator can quickly release capacity and voltage headroom and operate a cost, carbon and energy efficient distribution network at the same time.

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Since the project began in January 2014 the team have installed new voltage management technology in the company's main control room and at six primary substations and 40 associated distribution substations in Manchester, Wigan, Wigton and Egremont. The selected trial circuits cover diverse socio-geographic areas which are representative of the company's customer base.

The company has launched an engagement campaign to inform customers in the trial areas about the project.

SMART STREET

Smart Street employs three techniques:

- Co-ordinated voltage control, using transformers fitted with on load tapchangers and capacitors, across HV and LV networks
- Interconnecting traditionally radial HV and LV circuits and assuming control of these networks from the Electricity North West control room
- Real time co-ordinated configuration using bespoke Spectrum software developed by Siemens and voltage optimisation of HV and LV networks.

Capacitors and new controllable switching devices, called the WEEZAP and LYNX, developed in collaboration with Kelvatek, have been integrated into the network management system. This is the first demonstration in Great Britain of a fully centralised low voltage network management and automation system.

A series of trials to test the technology will begin later this year and will be carried out on a one-week-on and one-week-off basis until the latter part of 2017.

Understanding whether customers are affected by the trials is crucial to the viability of Smart Street. The company has launched an engagement campaign to inform customers in the trial areas about the project. A customer focus group was convened last year to help decide the best way to communicate information about the project to the 67,000 customers served by the trial circuits. The company issued an information leaflet and subsequently contacted around 1500 customers who live close to any new equipment installed as part of the project.

Once the trials are under way a series of focus groups will be held to collect qualitative information from customers to understand whether they observe any changes in their electricity supply as a result of the trials.

Find out more at: **www.enwl.co.uk/thefuture**

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