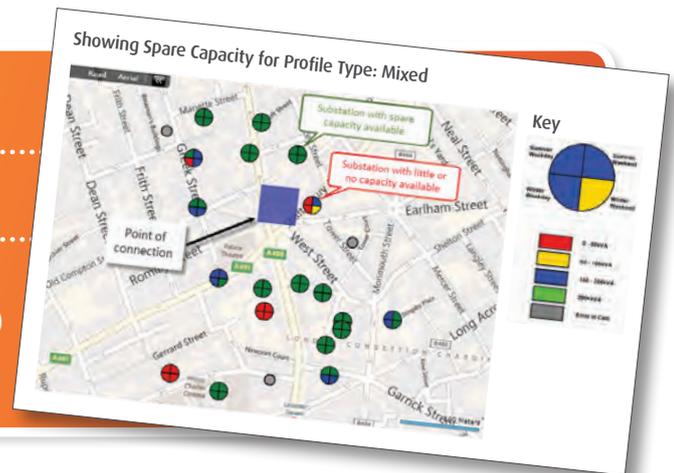


# Distribution Network Visibility

**Funding mechanism:** LCNF Tier 1

**Project budget:** £2.86 million

**Status:** Complete  
Start date: September 2010  
End date: September 2013



## Project concept/overview/challenge

Remote Terminal Units (RTUs) are electronic devices used to reconfigure electricity distribution networks and collect data about their performance. The information collected by RTUs is used to intervene, when necessary, to keep supplies safe and reliable. This project has explored better ways to collect and use the data we gather such as demand, capacity and faults on our networks.

Improving our remote telemetry is key to operating a 'smarter' electricity network which responds to swiftly changing electricity demand and generation. Improvements to our IT architecture mean we can now collect and store more data to gain a better understanding of how our networks are performing.

## Stakeholder benefits

- Quick identification of substations where new load is able to be connected.
- Improving the potential to defer costly reinforcement of the network through the use of demand profiles.
- Improving network and asset reliability by monitoring trends.
- Improving the management of substation and network utilisation.
- Providing information on network to better support operational activity.

## What we did/deliverables

- By maximising the capabilities of remote telemetry (RTUs) at our substations and developing software to improve our understanding of network performance, we have provided our engineers with greater visibility of the distribution network to enable proactive network management and earlier identification of critical issues.
- An in depth cost/benefit assessment of a variety of network data has helped us to evaluate what data should be collected and how often.

- The distribution network visibility (DNV) application has now been introduced into our business units as part of our 'business as usual' (BaU) deployment strategy. The benefits delivered through the use of the application will be tracked to support our continued improvements to customer services.
- Training sessions have ensured that those within the business units that will be using the DNV application are comfortable with the tool. The training sessions were tailored to the needs of each unit and focused on functions of the application that are most relevant to the teams within the units.

## Findings

**Embedding into Business as Usual** - the training sessions have been well received and have resulted in many of our employees now using the application as part of their everyday working routine. We worked closely with our IT department and have developed a clear process for managing existing and new DNV users. This has enabled us to capture any need for future improvements to the application, recording any identified problems with the application etc.

**Benefits delivered to the business** - real benefits have been delivered to the business through the use of the DNV application. The benefits include the facilitation of new customer load and generation connections, the identification and proactive resolution of high temperature issues at secondary substations and deferring network reinforcement.

**Benefits delivered to customers** - the DNV application is enhancing customer service at UK Power Networks by improving visibility of network conditions, letting us proactively manage electricity network issues before they result in power cuts. It also means we can identify and assess spare capacity on the network to support the connection of additional load or generation. The DNV tool also supports a reduction in carbon emissions by enabling the connection of new low carbon technologies such as electric vehicles and heat pumps.

## Next steps

- We have asked our employees to provide us with regular feedback on the DNV tool to dynamically manage the application and work continuously to improve it in order to serve current and future business needs in the most efficient way.
- Track the usage of the application by the business units and any benefits delivered as a result of using it. Additional refresher sessions may be developed for each business unit, particularly if the usage levels of the application start to drop.
- Implement any improvements suggested by our employees as part of our Support Agreement with Capula (developer of the DNV application) or, depending on the scale of these improvements, as part of future projects.
- UK Power Networks will continue to share the learning from the implementation of the DNV application to allow other distribution network operators to share the benefits we have identified.

## Partners

