FORESIGHT LOW VOLTAGE PRE-FAULT RECOGNITION AND MANAGEMENT

NORTHERN POWERGRID

FACTS

RESEARCH AREA	Network Reliability & Availability
START DATE - END DATE	Oct 2017- Mar 2020
FUNDING MECHANISM	Network Innovation Allowance
ESTIMATED EXPENDITURE	£4,000,000
PROJECTS PARTNERS	EA Technology
MORE ON	http://www.smarternetworks.org/project/nia_npg_007

CONTEXT

As a result of mature cable designs installed over the last 50 years, LV fault management is becoming increasingly difficult. Restoration times can be lengthy, as the majority of the LV network is neither comprehensively monitored nor controlled automatically. Responses to faults tend to be reactive as the condition of LV cable systems at any point in time is unknown and there is no capability of predicting the timing and location of faults before the event.

APPROACH

As stated in the Northern Powergrid innovation strategy we intend to reduce the number and duration of customer interruptions, where possible taking action before network issues impact customers. Foresight is an extensive programme of work that will develop and test a low-cost sensing system which will enable active and sophisticated remote monitoring of the LV networks, the identification of developing LV faults, and locating those potential defects which are likely to develop into LV faults. The intention is to achieve this identification and intervention before supply interruptions occur with their consequent impact on customers.

EXPECTED OUTCOMES

The programme of work includes development of equipment and field trials with the aim of verifying the efficacy of the system, identifying any practical 'business as usual' issues associated with wide-spread deployment of the system and to identify associated costs. The development of such a system will also require changes in operational practice to facilitate the change from reactive to proactive management. The trial will identify the changes needed and the practicalities of implementing those changes.

LONG TERM PRIORITIES

- Network Environmental Footprint
- **Network Reliability & Availability**
- Network Management & Flexibility
- Demand-side Response
- Network Planning & Design
- Communication & Engagement
- IT-enabled Process Improvements
- Social Responsibility