

Customers in favour of Respond's 'Fault Current Limiting service'

RESPOND



The Department of Industry wrote in 2005 that active fault level management will help electricity distribution network operators to quickly connect customers' low carbon demand and generation, and at a lower cost than traditional reinforcement. By combining innovative technical and commercial solutions with existing assets, the £5.5 million Respond project will make that vision a reality.

Electricity North West is leading the way in developing smart solutions to meet the UK's future energy demands.

As the regional electricity operator, the company is responsible for keeping the lights on for five million people in the North West of England. It's also their job to plan for the future and look at smarter ways of meeting the expected increase in electricity demand as we start to reduce our reliance on fossil fuels.

What is the Respond project?

In 2014 Electricity North West won funding from Ofgem's Low Carbon Networks Fund to launch the revolutionary Respond project which will deliver an intelligent approach to managing fault current – the instantaneous surge of energy that occurs under fault conditions.

An increase in demand for electricity will increase the potential fault current on the network, known as fault level. If fault levels exceed the current safety rating of network equipment, it will need to be replaced, which can be disruptive, lengthy and expensive.

The revolutionary Respond project will deliver an intelligent approach to managing fault current.

Using an intelligent Fault Level Assessment Tool, Respond will actively monitor demand and generation on the network and calculate fault level in near real time. If a fault occurs when excess fault level is detected, one of three innovative techniques will be enabled to manage this excess. These techniques include a revolutionary commercial concept known as the Fault Current Limiting (FCL) service.

The Fault Current Limiting service

When a fault occurs, all sources of generation connected to the electricity network contribute to fault current. Inertia in large synchronous motors can have the same effect under fault conditions. Using new technology which will be trialled as part of the Respond

A unique opportunity for customers to benefit from selling an FCL service to Electricity North West.

project, a customer's motor or generation source can be turned off instantly for up to 10 minutes so that it no longer contributes to the fault current. This is a unique opportunity for industrial demand and generation customers to financially benefit from selling an FCL service to Electricity North West through a managed service agreement.

To understand customers' views on the proposed FCL service, the company has carried out an extensive survey with industrial and commercial demand and generation customers. This survey, led by project partner Impact Research, included distribution network customers from across Great Britain and was supported by project partners ENER-G, the Association for Decentralised Energy and United Utilities. The aim of the survey was to determine the willingness and ability of customers across different sectors to provide managed FCL services and the price at which these customers would consider engaging in the provision of the service.

To develop the survey materials and customer contracts, a customer focus group was convened to ensure the survey achieved the best possible results.

Findings from the customer survey

Interim analysis of survey responses proves the hypothesis that the Respond method enables a market for the provision of an FCL service.

Although overall indicative take-up of the FCL service among the total market was relatively low, appetite is significantly higher among non-manufacturing customers who are able to cope with the constraint of their motor or generator for up to ten minutes

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without any significant impact on their productivity. These customers represent the target market for FCL services.

The survey also demonstrated that the preferred duration for an FCL service contract is likely to be one year. Significantly more customers were inclined to sign up if they are offered a 'payment per event' rather than a fixed annual availability payment.

Survey responses prove that Respond enables a market for the provision of an FCL service.

Next steps

Following this robust, targeted customer campaign, the company will focus on the following key activities to develop the FCL service proposal:

- Continue the quantitative survey to maximise the response rate
- Refine existing FCL service communication materials using learning from the survey
- Reconvene the customer focus group in April 2016 to help develop a suite of supplementary information for customers interested in providing an FCL service
- Develop commercial templates
- Secure up to five FCL service contracts as part of the trial
- Publish a comprehensive customer survey report in May 2017.

The Respond project runs from January 2015 until October 2018.

To see the interim customer survey report visit www.enwl.co.uk/respond/keydocs or to find out more about Respond visit www.enwl.co.uk/respond.

