Respond Project
Frequently asked questions

Q: Who is Electricity North West?

We are one of six licensed distribution network operators (DNO), which own and operate the electricity networks across GB. Electricity North West distributes electricity to 2.4 million homes and businesses in North West England.

We provide a safe and reliable electricity supply to every home and business in the North West, regardless of which electricity supplier customers' choose to buy their electricity from. (ie British Gas, nPower, EON, EDF etc).

The National Grid is responsible for the biggest power lines in the UK which transmit electricity from large power stations to Britain's towns and cities. DNOs, such as Electricity North West, look after local networks which are connected to the national grid. DNOs distribute electricity directly to customers' homes and businesses.

Part of our role is to plan for the future. A big challenge facing all DNOs in Great Britain is adapting to the transition of a low carbon future and the anticipated increase in electricity demand associated with this.

Q: What is Respond?

Respond is one of a number of Projects being trialled by Electricity North West, which uses innovative techniques and new technology to utilise existing electricity networks more effectively, to help us meet expected future demand. The Respond Project is funded by Ofgem's Low Carbon Networks Fund.

Increased demand and the connection of more small scale embedded generators (SSEGs) will create more pressure on the network and will cause an increase in 'fault current', which is the instantaneous surge of energy that occurs during a fault. DNOs install protection equipment to safeguard their network from damage that could be caused by fault current. However, if 'fault level' (which is the potential maximum amount of 'fault current' that will flow when a fault occurs) rises above the rating of our protection equipment, we have to replace it with higher rated equipment. Respond may help us to avoid or defer these traditional, expensive and disruptive reinforcement solutions. This will help keep costs down for customers, reduce carbon emissions and allow us to get the most from our existing network.

Without more efficient ways of utilising existing assets, some industrial and commercial customers may be unable to cost effectively connect SSEGs and therefore be prevented from making savings from generating their own electricity for heat and power.

Respond actively manages 'fault level' on the network by a range of techniques, including the Fault Current Limiting service (FCL service). This is a managed service agreement between industrial and commercial (I&C) generation or demand customers (ie users/consumers of electricity supplied from the public distribution network). Under the FCL service certain I&C customers could sell an FCL service to Electricity North West. This agreement would allow the DNO to switch off the customer's specified generator or motors, remotely and instantaneously in the event of a network fault. By switching off the motor or generator for up to a maximum of 10 minutes, Electricity North West can safely isolate the network fault and prevent fault current from causing significant damage to its protection equipment.

Whilst the Respond Trial will initially benefit those in the North West, it could potentially be rolled out across Great Britain and we are therefore interested in the views of organisations from across GB.

Q: How does Respond differ from other commercial load shedding/demand side response (DSR) arrangements?

Respond is a totally new commercial concept. It is unrelated to anything you might have heard of before such as demand side response (DSR), which is sometimes referred to as load shedding/load dumping. It is also different from short term operating reserve (STOR), the capacity market or energy storage schemes. Respond is also unrelated to rota disconnection, which is an emergency response, invoked under emergency conditions, to protect the distribution network.

You will NOT have been asked to complete a questionnaire by Electricity North West, or any other company, about this new commercial concept before, although you may have had previous conversations about other DSR arrangements.

Q: How do I get involved?

We are looking for customers to help us to test the market for the Respond FCL service agreement.

In the first instance, we are seeking help from companies with generation or large motors to complete a one-off survey in autumn 2015, to understand the appetite for an FCL service and to help best structure the appropriate contracts. Ideally the capacity of your generator or motor should be between 500kW to 15MW (or a combination of rotating plant with an equivalent aggregated capacity, connected to a common circuit breaker). This equipment should be connected, in parallel, to a high voltage (HV) supply on networks between 6.6 to 33kV.

You can help us if your electricity supply is connected to the distribution network at HV and you operate:

- Distributed generation, typically a combined heat and power (CHP) plant or other large synchronous generators, and/or
- Industrial AC synchronous motors connected to a circuit breaker.

We are interested in the views of businesses across Great Britain, as the scheme has potential to be rolled out nationally. If you would like to take part in the survey, please register online at www.enwl.co.uk/respond-survey.

The survey will take around 20-25 minutes to complete. We will contact you before then to discuss your involvement.

The surveys are being conducted by Impact Research, an independent market research agency, working on our behalf.

We are also looking for customers that meet the above criteria that operate within Electricity North West's region, who might be interested in trialling the FCL service equipment in spring 2016.

Q: If I agree to trial the FCL service what would the impact to my company be?

The technology used to activate the FCL service is being developed under the Respond Trials. This technology will give Electricity North West independent and remote control of the circuit breaker (CB) protecting your motor or generator. We will trip your CB and in turn your motor/generator remotely and instantaneously, **without any prior notice or consultation**, when we need to constrain its contribution to fault current.

The new technology will allow us to switch off **only** the specific motor or generator agreed in the managed arrangement. The FCL service will NOT trip the whole or part of the supply to your site, unless this is specifically agreed as part of the contract. The agreement would not isolate any transformers you may have on your site. Following the disconnect command, your circuit breaker will be re energised, generally within 3 and certainly within ten minutes, allowing you to safely switch your equipment back on.

The technical arrangement to activate and manage the FCL service will differ from site to site and will be subject to technical and commercial considerations specific to individual customers.

Q: Can I choose when to restrict the constraint of my generator/motor if I take part in the FCL service trial?

No - the enabling technology will be permanently connected to your circuit breaker and could constrain (switch off) your generator or motor at any time, as dictated by network conditions. Therefore, it is NOT possible for customers to request protected days when Electricity North West is prevented from tripping the circuit breaker to disconnect your equipment.

The agreement may not be suitable for organisations only able to offer the service when production processes are off-line, ie when your generators/motors are not operating.

Similarly, organisations with connected rotating plant which operates very infrequently might not be suitable for the FCL service; ie you may have standby generation which is only activated to provide your site with an alternative source of supply during a failure of the public network.

If you do not think the FCL service is suitable for your organisation, we would still value your contribution to the survey, as it would be helpful to understand your view and the main barriers to your organisation of this type of agreement.

Q: How frequently would my equipment be curtailed?

We anticipate that we would only activate the FCL service to switch off your equipment around four times each year. However, our survey will test the maximum frequency (between one and eight times per annum) that is acceptable to individual customers in different industrial and commercial sectors.

Q: When would my equipment be curtailed if I was part of the FCL service trial?

The FCL service trial will not impact on the current frequency of interruptions experienced by your whole site.

However, the specific motor or generator agreed in the managed arrangement will experience an increased frequency of interruption as they are called on to respond to faults over a larger area of our network.

On average, there are 8 independent circuits fed by a primary substation. Your supply would normally be interrupted if a fault occurs on the circuit which directly provides your electricity supply, but this depends on the location of the fault. Some customers have private back-up generators, to maintain their electricity supply when the public network fails.

Your site supply will not generally be interrupted by a fault on one of the other circuits fed from your primary substation but you might occasionally have noticed a slight dip in voltage, which sometimes coincides with the time the fault occurs, or the restoration of electricity to the customers that were directly affected (ie have experienced a supply interruption).

The specific motor or generator agreed in the managed arrangement however will react to a fault on any of these independent circuits. If the ‘fault level’ on the network is high when the fault occurs then specified equipment will be disconnected, leaving the remaining supply to your premises unaffected.

This is because your equipment is on and running - it is therefore contributing to the overall ‘fault current’, rushing to the point of the fault. By instantaneously constraining your motor or generator for just a few minutes, you can help us to significantly reduce the ‘fault level’ on the network. This will allow us to safely operate our protective devices (circuit breakers) and prevent them from failing. If the fault level is too high, our circuit breakers will be damaged and this will then cause much greater damage to the network.

Within no more than ten minutes of tripping your circuit breaker, Electricity North West will instruct you that it can be reclosed, allowing you to restart your equipment, in a controlled manner.

Q: Would the FCL service be enabled every time there is a fault on the network?

NO, we would NOT activate the FCL service and switch off your generator or motor every time there is a fault on one of the circuits fed from your primary substation. We would ONLY enable this service when 'fault level' on the network is high and approaching the safety rating of our protection equipment (circuit breakers) AND there is a network fault. The fault level varies continuously throughout the day, dependent upon the level of demand on generation on the network.

Q: Are there any risks of getting involved?

We are interested in understanding what risks customers believe might exist to their business, equipment or processes from the short duration interruption of the specified equipment.

Customers involved in advanced discussions regarding the provision of a FCL service will receive clear and transparent information about how and when enabling equipment will be installed, how long it will be installed for and how it will be decommissioned. Contracts will define the extent of Electricity North West's responsibility in relation to installation/ maintenance arrangements for FCL service technology. The contracts will also stipulate individual responsibility in terms of any necessary investment in infrastructure and issues relating to resilience, damage, maintenance and warranty of customers own equipment.

Managed contracts will detail all relevant terms and conditions to which customers have agreed. Customers will be fully consulted about the installation or modification of any equipment at their premises, which will be subject to their consent.

Customers who sign up to an FCL service agreement will not notice any difference in the quality or reliability of their electricity supply. We anticipate their specific motors or generators will be switched off remotely, approximately four times per year, when a fault occurs on a nearby network. Each of these constraints to specific equipment will last no more than ten minutes.

Where necessary, the Trial may be halted in order to investigate any customer concerns. Only when the customer's concerns have been resolved will the Trial be re-started.

Q: Why should I get involved?

Participation in the one off survey will be rewarded with £25 in shopping vouchers or the equivalent charitable donation.

Organisations who go on to provide a FCL service agreement, in the trial phase of the Respond project will receive a financial incentive. This survey will help us structure an appropriate pricing mechanism.

Respond will benefit all electricity customers in the long term by reducing reinforcement costs, bringing about significant savings. It is faster and cheaper than traditional methods and will allow us to manage existing network assets more efficiently and connect our new low carbon technologies more quickly and at less cost to the end customer.

To find out more about Respond and to watch the Project video please visit www.enwl.co.uk/respond.

Q: How can I contact Electricity North West about the Respond Project?

If you want to know more about Respond or your organisation is interested in providing an FCL service to Electricity North West, please email us at futurenetworks@enwl.co.uk.

Full contact details are provided below:

Respond website: http://www.enwl.co.uk/respond/contact-us
Email: futurenetworks@enwl.co.uk
Tel: 0800 195 4141 charged at *your standard network rate.*
Post: Future Networks, Electricity North West, Technology House, Salford, M6 6AP.

The Respond Project team will seek to respond to all queries as soon as possible, and in all cases, within ten working days.