

ETI launches £4m project with GridON to enable evolution of UK's electricity distribution networks

July 11, 2011

A £4m project has been launched by the Energy Technologies Institute (ETI) working with GridON which will reduce the impact of faults on electricity distribution networks, helping the growth and increased flexibility of distribution systems, with more low carbon electricity generation installed in the distribution system.

It will also help minimise the costs of upgrading the UK's electricity distribution network over the next 20 to 30 years.

The project will design, develop and demonstrate a Pre-saturated Core Fault Current Limiter. The FCL will be developed by GridON, based in Tel Aviv, Israel, built by Wilson Transformer Company, a leader in transformer engineering and manufacturing and one of GridON's shareholders. It will be installed and demonstrated at a UK Power Networks substation in Newhaven, East Sussex. E.ON will act as technical consultants.

It will develop and demonstrate a fault current limiter device, which will reduce the damaging currents resulting from network faults and increase electricity network reliability for the future and will be demonstrated on the network for a period of two years.

Ambitious specifications have been set, which exceed the capability of devices currently being demonstrated and which meet the real needs of network operators.

Faults within electrical power systems are inevitable and can cause stresses on the distribution system equipment. The short-duration currents arising from these faults increase as more energy sources are connected to the UK distribution system.

Existing techniques to manage these fault currents are costly and can have a negative impact on the power quality, stability, reliability and security of supply. Fault current levels are therefore becoming a significant barrier to the installation of low-carbon and other distributed generation. Management of these fault levels is also a key enabler for the growth of smart distribution systems, offering improved operation, flexibility and efficiency.

The project will address the range of technical applications for active fault current limiters in the UK and elsewhere.

ETI Chief Executive Dr David Clarke said: "Although we hear a lot about the importance of renewable energy sources to the UK's future energy mix, the infrastructure that provides power and heat to people's homes and businesses is also vital.

"This project will deliver a radical new approach for fault current limiters which will be thoroughly demonstrated on a live substation.

"Upgrading the UK electricity distribution network will cost tens of billions of pounds over the next 20-30 years and the device we will test in this project will help minimise these costs.

"This should provide reliable, low cost products that will benefit distribution network operators and suppliers of distributed generation equipment as well as consumers who will benefit from a more reliable electricity supply at a time when more energy is generated from renewable sources."

Yoram Valent, Chief Executive of GridON said: "This project has a game changing potential; the holy grail for utilities is a fault current limiter that requires practically no maintenance, no unproven technologies and instantaneous response.

"This is going to be the first time that such a device will be put to the test within a live network, in partnership with some of the world's largest and most advanced and versatile utilities. We are very proud to have been selected by the ETI for this project and we are looking forward to rapid implementation and successful results."

David Openshaw, Head of Future Networks for UK Power Networks, said: "This project forms an important part of our low carbon network innovation portfolio, through which we are trialling the technologies necessary to deliver the flexible distribution networks required in the future.

"Fault Current Limiters offer the prospect of greater network flexibility, which is particularly relevant to our urban networks such as those serving London. This is where we anticipate a much greater contribution from low carbon electricity generation as a direct result of London's decentralised energy policy and ambitious carbon emission reduction targets."

The ETI is a public private partnership between six global industrial companies and the UK Government tasked with developing "mass scale" technologies that will help the UK meet its 2020 and

2050 energy targets. It is concerned with identifying affordable, sustainable and secure energy across heat, power, transport and the infrastructure that links them.

Anyone interested in receiving details of future RfPs issued by the ETI can sign up to the RSS feed on the ETI website at <http://www.energytechnologies.co.uk/ETINewsRSS.rss>, subscribe to receive the ETI's newsletters by emailing info@eti.co.uk or follow the ETI on Twitter at www.twitter.com/the_eti

Notes to Editors

1. The Energy Technologies Institute is a UK based company formed from global industries and the UK Government. The ETI brings together projects and partnerships that create affordable, reliable, clean energy for heat, power, transport and associated infrastructure. For more information, please go to www.energytechnologies.co.uk
2. The ETI's six private sector members are BP, Caterpillar, EDF Energy, E.ON, Rolls-Royce and Shell. The ETI's public funds are received from the Department for Business Innovation and Skills through the Technology Strategy Board and the Engineering and Physical Sciences Research Council (EPSRC). The ETI will accelerate the deployment of affordable, secure low-carbon energy systems from 2020 to 2050 by demonstrating technologies, developing knowledge, skills and supply-chains and informing the development of regulation, standards and policy.
3. GridON's novel saturated core 3-phase fault current limiter is based on standard transformer technology. The device instantaneously turns itself into a very high impedance system upon current surges, and limits the current for as long as required to clear the fault. It recovers immediately thereafter and thus can protect from multiple faults occurring in immediate succession. In addition to the device fault current suppression ability, it facilitates current regulation and reactive power balancing.

The roots of GridON's technology are in the research and development conducted for the past eight years by a multi-disciplinary team of researchers with grounding in electrical engineering, mathematics, magnetism and superconductivity from Bar-Ilan University and Ricor. In bringing this groundbreaking, patent-pending technology to market, GridON entered a strategic partnership with long-established Wilson Transformer Company, a leader in transformer engineering and manufacturing, and one of GridON's shareholders.

The industry has recognized GridON's innovative solution. GridON was the recipient of a coveted innovation award from GE's Ecomagination Powering the Grid Challenge, and was awarded the Smart Grid Award in the annual European ACES Academic Enterprise Awards.

4. UK Power Networks provides power to a quarter of the UK's population through its electricity distribution networks. They are responsible for delivering a safe, secure and sustainable power

supply to eight million homes and businesses across London, the South East and East of England. The company, backed by strong ownership, aims to strengthen links with the local communities they serve, building on the skills base of the 5,500 people who work for them across the network including major bases in Bury St Edmunds, Ipswich, Potters Bar, London, Crawley and Maidstone.

For further information, please visit www.gridon.com or contact pr@GridON.com
+972.3.711.1183

For further information please contact

ETI PR Manager Nigel Richardson on 01509 202084/07827 946064 or email
nigel.richardson@eti.co.uk