



## Press release

12th February 2015

# BELECTRIC DEPLOYS SOLAR ENERGY TO STABILIZE THE NATIONAL GRID IN UK

**Iver (United Kingdom):** BELECTRIC UK is collaborating in a project led by National Grid plc to demonstrate how solar photovoltaic (PV) and other renewable energy operators can help stabilize the frequency and voltage of distribution networks — protecting the UK from power blackouts and instability — and so reduce the grid's reliance on spinning reserve. The Enhanced Frequency Control Capability (EFCC) project, approved by the energy regulator Ofgem, will demonstrate an innovative grid monitoring and control system that identifies potential problems as they arise and uses BELECTRIC energy storage and management technology to rectify them.

Meeting the UK's carbon reduction targets will mean replacing the consistent output of large fossil fuel power stations with an increasing diversity of smaller renewable energy sources, such as solar PV and wind turbines. This will require the integration and balancing of the different sources to provide virtual inertia and to prevent over-voltages or under-voltages, either of which can result in emergency shutdown and power outages. A conventional, but very expensive, approach to the problem would be to build additional infrastructure to allow capacity to be moved quickly from one part of the grid to another.

EFCC proposes the more elegant approach of adding battery-based back-up stations at strategic points on the networks, such as on the outskirts of large population areas, supported by a “rapid response” switching system. This would mean that a smaller installed generating capacity is needed to keep distribution networks stable, resulting in major cost savings. BELECTRIC's role in EFCC is to design, construct, connect and operate two large battery installations, one of which will be collocated with the company's Willersey Solar Farm in the Cotswolds. The Willersey installation will be supplied directly by the solar PV generation system while, for comparison, the other will take on excess energy from the grid during periods of low demand. Whenever the voltage deviates too far from its nominal value at the 2 point of connection, BELECTRIC's local control system will detect the resulting change in frequency of the AC signal. The system immediately manages energy to the grid to compensate for any under- or over-voltage. Because the system can respond almost instantaneously (within 25 ms), most problems can be averted using a much smaller energy input than would be required if the problem was allowed to snowball over the period of seconds it would take to ramp up a conventional power station. Other participants in the EFCC project include Alstom, which will develop an over-arching monitoring and control system using local and regional grid measurements to generate a rapid regional response to voltage/frequency disturbances; and Centrica, which will be conducting a similar study to that of BELECTRIC but using wind and large-scale thermal generation to provide the grid stabilization response. Academic partners include the Universities of Manchester and Strathclyde.

BELECTRIC UK managing director Duncan Bott said: “BELECTRIC has accumulated an enviable portfolio of IP related to grid stabilization. We have already demonstrated in Germany and the USA that solar PV operators can contribute successfully to frequency control at a local level. We look forward to bringing these complementary technologies and business models to our solar PV farms in the UK. In terms of both technology and experience, BELECTRIC is well placed to help implement a control network that can stabilize distribution networks both locally and nationally.”

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**About BELECTRIC®:** BELECTRIC is one of the most successful international enterprises in the construction of free-field solar power plants (solar farms) and roof-mounted photovoltaic systems. As an international company, BELECTRIC is represented in over 18 countries. Its position as technology leader is a result of the high degree of vertical integration in the development and manufacturing processes. BELECTRIC demonstrates its great innovative spirit with over 150 active patents. Alongside solar power generation, BELECTRIC Drive® manufactures intelligent charging products for e-vehicles. The Charging Box series provides a smart and solar powered charging infrastructure for electro mobility. Further information can be found at [www.belectric.com](http://www.belectric.com).

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