



GE to enable Britain's pilot of a multi-vendor digital substation

- *FITNESS is the first live project with multi-vendor interoperability based on international standards in the UK*
- *GE's solution consists of an innovative substation digital control system encompassing fast and reliable data exchange across the entire substation*
- *A smaller, smarter and more efficient solution, enabling the integration of more renewable energy*

LONDON and PARIS – June 14, 2016 – UK's electrical grid is about to get smarter and fitter. Scottish Power Energy Networks (SPEN) has selected GE (NYSE: [GE](#)) to be the supplier of the digital control system for its Future Intelligent NEtwork SubStation (FITNESS) project. FITNESS will pave the way towards a smarter electricity grid as part of [UK's energy security](#) initiatives to transition to a low carbon economy and is part of the RIIO Network Innovation Scheme (NIC). GE will deliver an intelligent digital substation complete with a full suite of interoperable solutions to SPEN.

A smarter electricity grid is a critical enabler for Britain's aim to reduce CO₂ emissions by [80% in 2050](#). Through RIIO NIC, the UK is investing over [£500 million](#) to support smart grid trials. The FITNESS project will provide a complete intelligent digital substation solution that enables faster deployment, greater availability, improved safety and greater controllability with a reduced footprint and cost. It will be the first live project in the UK to demonstrate multi-vendor interoperability through the [IEC 61850¹](#) standard. Multi-vendor interoperability will allow customers with the freedom to plug and play the best solutions to fit their needs, irrespective of vendor.

Colin Taylor, Director Engineering Services, SPEN adds *"FITNESS is a ground breaking project as after successful demonstration it will change the way we maintain and build new substations. As a mainly asset based business we see huge potential for benefits to our customers through minimizing use of copper and reducing substation footprint. We as an innovative company encourage vendors like GE to work with us to change our existing methods and work towards a low carbon future."*

"Digital Substations have a strong part to play in the UK's energy and climate goals. Our solution allows utilities to have real time information on how energy flows in the Grid, enabling quicker decision making and greater electricity availability. The ability to effectively integrate more renewable energies, while optimizing allocation of capital and operational expenditure, is key as the UK moves towards lowering its carbon footprint." said Herve Amossé, General Manager, Grid Automation at GE's Grid Solutions.

FITNESS will be the first live project in the UK to demonstrate multi-vendor interoperability. This flexibility provides customers with the viable advantage of introducing other vendors into the mix, creating a healthy competitive environment. GE will provide SPEN with a full digital substation architecture that will connect GE equipment with a selection of third party vendors. These vendors will be interfaced to GE's IEC 61850 compliant process and station buses that is based on GE's [DS Agile](#).

GE's solution consists of an innovative substation digital control system encompassing fast and reliable data exchange across the whole substation. Integrated with a Grid Stability Package, this control system enhances grid controllability and improves asset efficiency through monitoring, managing and analyzing the grid dynamics. Apart from this, GE's intelligent digital substation is:

¹ The IEC 61850 is a unifying communication standard, one of the core standards relevant to Smart Grid that is issued by the International Electrotechnical Commission (IEC), a leading global organization that publishes consensus-based International Standards



- **A compact and light solution** with reduced equipment size and replacement of copper wiring with digital communications over optical fibre that also maximizes the safety of personnel, improving maintainability and optimizing substation footprint.
- **Equipped with state-of-the-art Compact Sensor Intelligence (COSI)** digital instrument transformers that digitize signals at the source, eliminating physical connections, thereby reducing electrical hazards.
- **Capable of delivering enhanced functionality**, that is made possible with the qualities of optical sensors and greatly improved access to dynamic measurements, including new options for fault and harmonic information management to assist engineers in the transition to a low carbon grid.
- **Enabling more rapid connection of renewable generation**, through the standardized integration of new and flexible wide area control capability in a digital substation environment, enabling use of transmission assets closer to its physical limits.
- **A flexible platform**, with to GE's [Grid Stability Package](#) that supports the information resources and controllability needed for the future.
- **Providing real-time efficient Ethernet communication** through the IEC 61850 compliant digital control system, coupled with the latest [P40 Agile](#) and [Reason](#) intelligent protection and measurement devices, using inter-operable communication technologies.

“Developing a set of digital solutions with multi-vendor interoperability allows our customers the flexibility to expand and adapt to make more effective use of their assets. The benefits of standardization will provide for lower installation, commissioning and migration costs for our customers in the future. This success will be an important reference for many other smart grid projects around the world.” said Karim El Naggar, Chief Digital Officer at GE Energy Connections.

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About GE

GE (NYSE: [GE](#)) is the world's Digital Industrial Company, transforming industry with software-defined machines and solutions that are connected, responsive and predictive. GE is organized around a global exchange of knowledge, the "GE Store," through which each business shares and accesses the same technology, markets, structure and intellect. Each invention further fuels innovation and application across our industrial sectors. With people, services, technology and scale, GE delivers better outcomes for customers by speaking the language of industry. www.ge.com

About Energy Connections

GE Energy Connections designs and deploys industry-leading technologies that turn the world on. We transport, convert, automate and optimize energy to ensure we provide safe, efficient and reliable electrical power. Uniting all the resources and scale of the world's first digital industrial company, we connect brilliant machines, grids, and systems to power utility, oil & gas, marine, mining and renewables customers, that keep our world running. www.GEEnergyConnections.com

About GE's Grid Solutions

Grid Solutions, a GE and Alstom joint venture, equips 90% of power utilities worldwide to bring power from the point of generation to end power consumers. With over 200 years combined experience in providing advanced energy solutions, our products and services enable more resilient, efficient and reliable power systems. Over 20,000 employees in 80 countries work to satisfy our customers globally. For more information, visit www.GEGridSolutions.com

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