



GE and Singapore Power are innovating the grid for a future ready Singapore

- *GE's digital control system will enable a fully digital substation*
- *Preparing the grid to adopt additional renewable energy sources*
- *Making Singapore Smart Grids a reality*

SINGAPORE – August 16, 2016 – The most innovative city in Asia is planning to apply revolutionary technologies to its electrical grid. GE (NYSE: [GE](#)) is partnering Singapore Power (SP) to supply an innovative digital substation as part of SP Centre of Excellence (CoE)'s SPEAR (Singapore Power Advanced Research & Development) program. The SPEAR program aims to drive innovation and commercialization of next-generation energy network technologies. The program was set up to specifically develop and pilot technologies that will build up the resilience and reliability of Singapore's energy network infrastructure.

Singapore announced plans raise the utilization of solar power, predominantly solar photovoltaic (PV) to [350 Megawatt peak \(MWp\) by 2020](#), representing 5 percent of overall projected peak electricity demand. Today the installed capacity is just above [71 MWp](#). Innovating the grid is a key element to prepare a future grid that is able to integrate additional renewable energy sources.

"SP CoE is committed to driving research and innovation that translates into a future-ready national grid," said Mr. Brandon Chia Seng Boon, Head, Centre of Excellence at Singapore Power. "Innovation is at the heart of Singapore's transition to a smarter electrical network. We look forward to partnering GE in digitising our substations, enabling us to anticipate issues, improve system performance and reliability, and prepare for the integration of renewable energy sources."

GE will provide an end-to-end digital substation based on its digital control system [DS Agile](#). The entire digital infrastructure, protection, communication, Human Machine Interfaces and automation equipment are all [IEC 61850](#)¹ compliant, allowing for multi-vendor interoperability. Installed in a 66kV Gas Insulated Substation (GIS), GE's DS Agile will provide SP with improved monitoring, protection and control for a total of 8 switchgear bays. The system transmits digital communications using optical fibre in place of copper wiring, maximizing the safety of personnel. It is a compact solution, with a reduced equipment size of up to 10%, further optimizing the system's footprint. New advanced substation software applications, such as wide area monitoring and active control, self-testing will also improve the reliability and the flexibility of the substation and grid to prepare for the integration of renewable energy.

"Thanks to Singapore Power's foresight, Singapore is stepping ahead of the game to embrace new technologies in the energy sector. It is also the perfect place in this region, to showcase these technologies," said Jack Wen, president for the Asia Region, GE's Grid Solutions business, which is a part of GE Energy Connections. "Making the grids smarter is important for Singapore to continue to forge ahead a sustainable city. Adapting today's grid to connect more renewable energy sources is a key element for the Singapore of tomorrow."

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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



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 GE 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 and 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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About Singapore Power and SP Centre of Excellence

Singapore Power Group (SP) is a leading energy utility group in the Asia Pacific. It owns and operates electricity and gas transmission and distribution businesses in Singapore and Australia, and district cooling businesses in Singapore and China.

More than 1.4 million industrial, commercial and residential customers in Singapore benefit from SP's world-class transmission, distribution and market support services. The networks in Singapore are amongst the most reliable and cost-effective worldwide. For more information, please visit www.singaporepower.com.sg.

The SP Centre of Excellence (CoE) is an initiative by Singapore Power (SP) to drive the innovation and commercialisation of next-generation energy network technologies for the greater reliability and efficiency of Singapore's infrastructure. Supported by the Singapore Economic Development Board, the CoE aims to establish SP as a thought leader in the utility industry forefront and build future-ready energy networks and resource capabilities, to stay ahead of global trends such as the drive for smarter and greener performance, to sustainably meet the evolving customer needs of the future.

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GE Contacts

Julie Khoo
Media Relations
GE's Grid Solutions
+33-6-98-86-83-04
Grid.MediaRelations@ge.com