Press release

Munich, May 12, 2021

Balancing the Italian grid: Siemens Energy's grid stabilization solutions enable seamless integration of renewable energy

- Two static synchronous compensator (STATCOM) systems and two synchronous condensers will ensure stability of Italian grid
- First space saving, single phase and containerized 125 Mvar STATCOM solution

Italian transmission system operator Terna. S.p.A (Terna) has ordered two static synchronous compensator (STATCOM) systems for grid stabilization from Siemens Energy. It is Siemens Energy's first STATCOM order from Italy and will help the country meet new power grid challenges posed by the energy transition.

The two new STATCOM systems, part of Siemens Energy's SVC PLUS series, will be built in Villanova (Abruzzo region) and Latina (Lazio region) and will contribute to interconnections between Italy and Montenegro and mainland Italy and Sardinia. They will be delivered as an innovative space-saving containerized solution, which also reduces project execution time and effort by avoiding building approval procedures. Earlier, Terna ordered two synchronous condenser plants that are now under construction in Fano and recently in Rosara (both Marche region).

Integrating a higher share of renewable energy into power systems and the increasing energy demand pose challenges to grid operators around the world. In particular, wind and solar are characterized by high degrees of volatility and intermittency. The four Flexible AC Transmission Systems (FACTS) from Siemens Energy will help Terna to manage these challenges: The two new STATCOM systems will stabilize voltage fluctuations by acting as either a source or sink of reactive power depending on the requirements of the Italian grid. They will significantly reduce the risk of voltage drops and blackouts. In addition to reactive power, the synchronous condensers will also provide short circuit power and inertia - both urgently needed to compensate for fewer conventional power plants. The synchronous condenser solution uses a conventional generator to provide the short circuit contribution and enlarge the necessary inertia by coupling a loss optimized

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flywheel to the rotating mass of the rotor. In this way, they help stabilize network frequency. The first synchronous condenser in Fano is planned to be commissioned at the end of 2021, and the second in Rosara in October 2022. The two STATCOM systems will be commissioned in June 2022.

"Grid operators like Terna have the tremendously important roles of reconverting and redesigning the electricity infrastructure to meet decarbonization targets without compromising grid stability and reliability," said Beatrix Natter, Executive Vice President Transmission at Siemens Energy. "Our state-of-the-art grid stabilization technologies will help Terna to manage the growing complexity of the electricity system and offer an efficient, secure, and sustainable Italian grid."

The two STATCOM systems based on Siemens Energy's SVC PLUS technology operate with 125 megavolt-ampere reactive (Mvar) each at 400 kilovolts and will be the first completely containerized STATCOM solution at this voltage level. The SVC PLUS technology combines the benefits of STATCOM and modular multilevel converter technology with an optimized number of components. By requiring relatively few system components, the solution simplifies designing, planning, and engineering, and can be containerized. The key benefits for Terna include reduced space requirements and simplified construction permits.

Containerized static synchronous compensator (STATCOM) solution from Siemens Energy.

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This press release and a press picture is available at https://press.siemens-energy.com/global/en/pressrelease/balancing-italian-grid-siemens-energys-grid-stabilization-solutions-enable-seamless

For further information on Siemens Energy Transmission, please see https://www.siemens-energy.com/global/en/offerings/power-transmission.html

For further information on Flexible AC Transmission Systems, please see https://www.siemens-energy.com/global/en/offerings/power-transmission/portfolio/flexible-ac-transmission-systems.html

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