

Joint press release

Munich and Osaka, March 15, 2021

Press release by Siemens Energy and Sumitomo Electric Industries

Siemens Energy and Sumitomo Electric commission first VSC HVDC link improving power quality in India

- India's first electricity link featuring voltage-sourced converter technology in commercial operation
- First hybrid application of DC-XLPE cable and overhead transmission line
- Total system of two links allows electricity exchange of up to 2,000 megawatts to meet country's power deficits

The joint venture of Siemens Energy and Sumitomo Electric has completed connecting India's first high-voltage direct current (HVDC) link featuring voltage-sourced converter (VSC) and DC-XLPE cable technology. The 2,000 megawatts (MW) electricity transmission system consists of two converter stations, that are connected via two links comprising DC-XLPE cable and overhead transmission line. It enables the power exchange between Pugalur in the southern state of Tamil Nadu and Trichur in Kerala State in South-West India and supports transmission operator Power Grid Corporation of India (PGCIL) to counter power deficit in India's southern region and improve the grid stability. Siemens Energy supplied the two converter stations for the ± 320 kilovolt (kV) HVDC system while Sumitomo Electric was responsible for the XLPE HVDC cable system in the DC circuit.

"Thanks to the excellent cooperation between PGCIL, Siemens Energy and Sumitomo Electric, we are now able to proudly commission the first HVDC link in India featuring VSC technology. The result of this fruitful collaboration will significantly help achieving grid programs like the '24x7 power for all' initiative by India's Ministry of Power to meet the country's growing power demand," said Beatrix Natter, Executive Vice President Transmission at Siemens Energy.



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“We are pleased to announce the successful delivery of the first HVDC-XLPE cable project in India. This was achieved through strong support from PGCIL and collaboration between Sumitomo Electric and Siemens Energy at various levels, even during difficult circumstances caused by COVID-19. With the successful completion of this unique hybrid system, consisting of HVDC-XLPE cable and overhead lines, we proved our reliable technology and project execution. I hope this will be a basis for continuous collaboration with PGCIL and a significant contribution to transmission systems in India,” said Masaki Shirayama, Managing Director at Sumitomo Electric.

Siemens Energy is responsible for design, engineering, supply, installation, and commissioning of the HVDC stations, including converter valves, transformers, cooling systems as well as control and protection technology, plus a complete transition station, while Sumitomo Electric provides design, engineering, supply and installation of the HVDC cable system including civil and installation works. In comparison to conventional HVDC systems, the VSC-based HVDC PLUS technology featured at the Pugalur-Trichur link comes with benefits like additional control features, black start capability, and other functions that will improve the performance and security of the transmission system. The converter stations are linked via a 108km XLPE HVDC cable system comprising four cables a route of 27km each which was supplied by Sumitomo Electric, and overhead transmission line a route of approximately 155km installed under another contract.

In February Shri Narendra Modi, Prime Minister of India, officially inaugurated the link that now have been put into commercial operation and enables the exchange of electricity in both directions. HVDC links offer operators more ways, boosting stability and increasing the grid’s power quality, efficiency, and security of supply – urgently needed options as the role of renewable energy grows. In India, where 175 gigawatts of renewable energy-based installed capacity by 2022 is targeted, the HVDC link between Pugalur and Trichur will help meet future requirements and facilitate the efficient use of renewable energy. To date Siemens Energy has implemented more than 57 HVDC projects worldwide and is involved in eleven projects that are currently under construction. Sumitomo Electric Industries has installed nine HVDC cable projects worldwide and works on two ongoing projects including one of the first DC525kV XLPE cable project in Germany.



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This press release and press pictures are available at <https://press.siemens-energy.com/global/en/pressrelease/siemens-energy-and-sumitomo-electric-commission-first-vsc-hvdc-link-improving-power>

For further information on Siemens Energy HVDC technology, please see <https://www.siemens-energy.com/global/en/offerings/power-transmission/high-voltage-direct-current-transmission-solutions/hvdc-plus.html>

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Siemens Energy is one of the world's leading energy technology companies. The company works with its customers and partners on energy systems for the future, thus supporting the transition to a more sustainable world. With its portfolio of products, solutions and services, Siemens Energy covers almost the entire energy value chain – from power generation and transmission to storage. The portfolio includes conventional and renewable energy technology, such as gas and steam turbines, hybrid power plants operated with hydrogen, and power generators and transformers. More than 50 percent of the portfolio has already been decarbonized. A majority stake in the listed company Siemens Gamesa Renewable Energy (SGRE) makes Siemens Energy a global market leader for renewable energies. An estimated one-sixth of the electricity generated worldwide is based on technologies from Siemens Energy. Siemens Energy employs more than 90,000 people worldwide in more than 90 countries and generated revenue of around €27.5 billion in fiscal year 2020. www.siemens-energy.com.

Sumitomo Electric Industries, Ltd. is the largest cable manufacturer in the world, which was established in 1897. Since then, based on electric wire and cable manufacturing technologies, we have diversified our business fields. Currently, we operate in five major segments: Automotive; Info-communications; Electronics; Environment & Energy; and



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Industrial Materials. Throughout these extent of business, we have our base at over 40 countries with more than 280,000 employees in all of the continents, with yearly turnover of approximately JPY 3 trillion (≈€ 25billion). We have been contributing to society through environmental friendly and fair business activities globally. Further information is available below.

Website: <https://sumitomoelectric.com/>

High Voltage Cable and Overhead Conductor Web page: <https://global-sei.com/power-cable-business/>

LinkedIn: <https://www.linkedin.com/showcase/sumitomo-electric-power-cable-and-energy/>



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