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Historical power interconnector in Canada achieves key milestone

ABB successfully tests HVDC link enabling exchange of clean power from Newfoundland and Labrador to Nova Scotia and the North American grid

ABB recently achieved a major milestone with the successful testing of the Maritime Link, enabling Emera to exchange electricity between the Island of Newfoundland and Nova Scotia for the first time in history.

The Maritime Link is a 500 megawatt (MW) high-voltage direct current (HVDC) connection that will enable clean, renewable energy, generated in Newfoundland and Labrador to be transmitted to the North American grid in Nova Scotia. The stabilizing features of ABB’s latest HVDC Light® solution will also allow Nova Scotia to integrate additional renewables and contribute to Canada’s emission-reduction efforts.

The HVDC Light® Maritime Link is the first of its kind in the world with a full Voltage Source Converter (VSC) bipolar configuration, to enhance system availability. The converter stations will be equipped with the ABB Ability™ based advanced MACH™ control and protection system which acts like the brain of the HVDC link. It monitors, controls and protects the sophisticated technology in the stations and manages thousands of operations to ensure power reliability. Its advanced fault registration and remote control functions also help protect the link from unexpected disruptions, such as lightning strikes.

“Our innovative HVDC Light technology will enable the historical Maritime project to integrate and deliver clean renewable energy while enhancing grid stability and enabling power sharing”, said Patrick Fragman, head of ABB’s Grid Integration business, a part of the company’s Power Grids division. “HVDC transmission, a technology we pioneered and lead, is an important element of our Next Level strategy, providing customer value and enabling a stronger, smarter and greener grid.”

In addition to the two converter stations for the ±200 kilovolt (kV) HVDC link, the project scope also includes two 230 kV alternating current (AC) substations in Newfoundland, one 345 kV AC substation in Nova Scotia and two cable transition stations.

ABB pioneered HVDC technology 60 years ago and has been awarded approximately 120 HVDC projects representing a total installed capacity of more than 130,000 MW, accounting for about half of the global installed base. The company also pioneered VSC-based HVDC Light technology 20 years ago and is the market leader, having delivered 19 of the 25 VSC HVDC projects commissioned around the world.

HVDC Light is a preferred solution for long-distance underground and underwater power links and interconnections like the Maritime Link Project. This technology is increasingly being deployed across a range of applications. These include integration of renewable energies from land-based and offshore wind farms, mainland power supply to islands and offshore oil and gas platforms, city center in-feeds where space is a major constraint and cross-border interconnections that often connect across the seas. Its ability to meet grid code compliance ensures robust network connections regardless of application. The latest generation of this technology can transmit power at ±640 kilovolts (kV) over 2,000 kilometers and deliver up to 3,000 MW of electricity – enough to power several million households.
ABB (ABBN: SIX Swiss Ex) is a pioneering technology leader in electrification products, robotics and motion, industrial automation and power grids, serving customers in utilities, industry and transport & infrastructure globally. Continuing a history of innovation spanning more than 130 years, ABB today is writing the future of industrial digitalization and driving the Energy and Fourth Industrial Revolutions. As title partner of Formula E, the fully electric international FIA motorsport class, ABB is pushing the boundaries of e-mobility to contribute to a sustainable future. ABB operates in more than 100 countries with about 136,000 employees. www.abb.com

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