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ABB's microgrid to power Aruba and support transition to renewable energy

ABB microgrid will integrate wind and solar energy to provide electricity to Caribbean island that was previously fully dependent on fossil fuels

ABB will provide an advanced microgrid to WEB Aruba N.V., the main power utility serving the Dutch Caribbean island of Aruba. ABB's software, automation and control technologies will help WEB Aruba integrate solar and wind energy, forecast and plan better and optimize operations in real-time, while meeting Aruba's growing demand for electricity.

The island is 32 km long and 10 km across its widest point. It has a land area of 179 square km and a population of about 103,000 inhabitants. A popular tourism destination, Aruba has a peak demand of 134 megawatts currently met by a mix of thermal, wind and solar photovoltaic generation. The utility has set a goal to generate half its annual average energy supplied from renewable energy sources and the other half from alternative fuels by 2020, supporting the government's vision to become completely fossil-fuel free.

ABB's microgrid solution allows for integration of a complex energy generation portfolio and maximizes the use of renewable energy, while optimizing operations in real-time. Using 24 hour forecasts of both renewable output and system load, the system will help plan operations and adjust dispatch in real-time to accommodate changes in renewable output, load or generation availability. This leads to a more automated grid.

At the heart of the solution is an advanced control system with dynamic load shedding capability. When major system transients occur, that the generation and storage are not able to accommodate, the system immediately calculates the minimum load shed required to stabilize frequency. It also ensures the distribution of load shed events so that no critical facilities are impacted.

"This innovative microgrid solution will support the island of WEB Aruba to integrate more renewables and maintain reliability and efficiency of power supplies to meet increasing demand for electricity", said Massimo Danieli, head of ABB's Grid Automation business, a part of the company's Power Grids division. "The embedded software, automation and control technologies will also facilitate 24 hour forecasts and enable a stronger, smarter and greener grid."

"We're eager to continue developing future projects together with ABB as they have enabled us in achieving our goals by introducing new renewables, new technologies and by adding value to our island's economy", explained Francis Ras, Division Manager Technical Affairs of WEB Aruba.

ABB is a pioneer in microgrid technology with around 40 installations all over the world, across a diverse range of applications serving remote communities, islands, utilities and industrial campuses.

ABB (ABN: 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 more than 125-year history of innovation, ABB today is writing the future of industrial digitalization and driving the Energy and Fourth Industrial Revolutions. ABB operates in more than 100 countries with about 132,000 employees.

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