

Microgrid control technology to enable greening of remote island

Project allows mid-Atlantic island to boost wind capacity while maintaining stability of grid

Zurich, Switzerland, Dec. 4, 2013 – ABB, the leading power and automation technology group, has delivered and commissioned a microgrid control solution that enables the island of Faial in the Atlantic ocean to add more wind energy to its power mix without destabilizing the network.

Faial is one of nine volcanic islands in the Azores, a Portuguese archipelago located midway between Europe and North America, about 1,500 kilometers from the mainland. The island of 15,000 inhabitants has an electricity network which operates as a self-contained microgrid, powered by six oil-fired generators that produce up to 17 megawatts (MW) of electric power.

The local power utility, Electricidade dos Açores (EDA) has installed five wind turbines as part of its efforts to boost capacity by more than 25 percent and minimize environmental impact on Faial, where tourism is an important industry. Faial is also known as the 'Blue' island, due to the countless hydrangea hedges that bloom in summer.

"ABB's technology will facilitate the control and monitoring of all the wind turbines and oil-fired generators on the island," said Claudio Facchin, head of ABB's Power Systems division. "This is an important function as the intermittency associated with wind energy can cause frequency and voltage fluctuations that can destabilize the microgrid, and in extreme cases even lead to power disruptions and blackouts."

The control solution, a flagship technology of the recent Powercorp acquisition, will calculate the most economical configuration, ensure balance between supply and demand, maximize the integration of wind energy and optimize the generators so that the entire system performs at peak potential. The integration of wind energy combined with ABB's innovative solution will save an estimated 3.5 million liters of fuel per year enough for a car to travel about 2,300 times around the world. This has the potential to reduce annual carbon dioxide emissions by around 9,400 tons.

ABB has previously delivered solutions to integrate renewable energy into the diesel-based power systems of the Azorean islands of Flores and Graciosa, enabling fuel savings and reductions in carbon dioxide emissions.

ABB (www.abb.com) is a leader in power and automation technologies that enable utility and industry customers to improve performance while lowering environmental impact. The ABB Group of companies operates in around 100 countries and employs about 150,000 people.

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