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Alstom Haliade 150 offshore wind turbine – part of US DOE's¹ advanced technology demonstration programme

Alstom is a member of a team led by Dominion Virginia Power, which has been awarded a \$4M USD grant by the US Department of Energy (DOE) to complete the engineering, site evaluation and planning phase for an offshore wind demonstration project in the state of Virginia. This award strengthens Alstom's position as a leading player on the worldwide wind market.

DOE's advanced technology demonstration programme is intended to achieve large cost reductions over existing offshore wind technologies and develop viable and reliable options for the United States. Through this effort, America's first offshore wind projects could enter commercial operation by 2017.

The Dominion's team's proposal includes the installation of two Alstom Haliade 150 offshore wind turbines approximately 22 miles off the coast of Virginia Beach. These units would be fully-integrated with the state's onshore power grid and feature innovative foundations.

The Haliade 150 offshore wind turbine is built on Alstom Pure Torque technology, which significantly reduces stress on its power generating components. This unique design combined with a permanent magnet direct drive generator and a 150-meter rotor reduces the cost of offshore wind power by increasing reliability and availability, improving drivetrain efficiency, boosting energy yield, and reducing operations and maintenance (O&M) costs.

"Virginia has the potential to generate as much as 2,000 megawatts of electricity using offshore wind, enough to power a half-million homes at peak demand. The Dominion-led team is focused on applying the right mix of technology and offshore engineering expertise to bring that energy to homes and businesses at competitive rates", commented Andy Geissbuehler, head of Alstom's North American Wind business. "In supplying 240 offshore wind turbines in France, Alstom is creating up to 5,000 jobs and establishing an entirely new manufacturing base. This example illustrates how offshore wind in the U.S. could catalyse new industries, stimulate the economy and create new jobs."

¹ DOE: Department of Energy

Alstom recently achieved a milestone in the development of the Haliade 150, with the first machine completing onshore tests at full 6MW output in France. A second unit will be installed offshore off Belgium coasts in the first half of 2013.

The company has been actively supporting America's exploration of offshore wind. In 2011, Alstom was selected by DOE to lead a team in researching and developing advanced control systems, integrated sensors that increase energy production and advanced floating substructures – all seen as ways to drive down the capital costs of offshore turbines. Partners in that effort include the National Renewable Energy Laboratory, the Massachusetts Institute of Technology and Texas Tech University.

Seven teams have been awarded up to \$4M USD each by DOE to advance their proposed projects through initial engineering. Once this first phase is complete, DOE will select three projects to receive up to \$47M USD in additional funding.

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About Alstom

Alstom is a global leader in the world of power generation, power transmission and rail infrastructure and sets the benchmark for innovative and environmentally friendly technologies. Alstom builds the fastest train and the highest capacity automated metro in the world, provides turnkey integrated power plant solutions and associated services for a wide variety of energy sources, including hydro, nuclear, gas, coal and wind, and it offers a wide range of solutions for power transmission, with a focus on smart grids. The Group employs 92,000 people in around 100 countries. It had sales of €20 billion and booked close to €22 billion in orders in 2011/12.

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