

Siemens wins wind power order to connect Lincs offshore wind farm

Siemens has been awarded a major wind energy order with Lincs Wind Farm Ltd to implement the grid connection for the Lincs offshore wind farm.



The order volume for the grid connection is GBP101 million (approximately EUR120 million). Siemens Energy announced in December it is also supplying 75 of its high-performance 3.6 megawatts (MW) wind turbines for the wind farm.

Construction is scheduled to start in late summer this year, with first generation planned for 2012. When operational, the Lincs wind farm could provide green power for approximately 200,000 homes in the East of England, contributing towards a significant reduction of carbon dioxide emissions.

The wind farm with an installed capacity of up to 270 MW will be installed 8 kilometres offshore, near Skegness, Lincolnshire on the east coast of the UK. Siemens will supply an offshore substation platform, which will bundle the power generated by the wind turbines before it is transported via high-voltage cable to the mainland.

The substation will be equipped with two 240 MVA transformers as well as 132 kV high-voltage and 33 kV medium-voltage switchgear. The requisite protection and instrumentation and control equipment will also be installed on the platform.

The transformers on the substation platform will step up the 33 kV voltage from the wind turbines to a transmission voltage of 132 kV. High-voltage subsea cables will transport the power to the grid feed-in point, which is located at the Walpole 400 kV substation near King's Lynn.

In addition to the offshore substation, an onshore substation is to be supplied, which will be equipped with two 300 MVA power transformers (400/132/13.9 kV), Siemens will install two filters, 132 kV and 400 kV switchgear, and a reactive-power compensation system in order to meet the requirements of the UK power supply network on the quality of the power infeed (Grid Code).

Udo Niehage, CEO of the Power Transmission Division of Siemens Energy said: "We not only have the technology and know-how but also extensive project management experience with grid connections for offshore wind farms. Our recognized expertise in offshore connections is benefiting a number of international projects, especially in the UK, a fast growing market for renewables. In the UK, Siemens is the leading provider of

integrated grid connection solutions for renewable energy, connecting 75 percent of the UK's offshore wind farms to the UK grid. Our current projects will provide over 2.2 gigawatts of energy to homes and businesses across the UK.”

Siemens will use its new SVC Plus system for this purpose. SVC Plus operates with Siemens' innovative voltage-sourced converter (VSC) technology and can be continuously controlled with the aid of insulated-gate bipolar transistors (IGBTs). The central feature of SVC Plus, a refined statcom (static synchronous compensator) is its modular multilevel converter technology. By contrast with other self-commutated converter topologies, the voltage waveshape produced by SVC Plus is practically sinusoidal by virtue of the multilevel technology. This makes existing low-frequency harmonic filters, found in current solutions unnecessary, and significantly reduces the space requirements for the overall system.

Siemens will also prepare the requisite design studies for all of the wind farm's electrical components and the grid studies to provide evidence of fulfillment with grid connection requirements.

Energy-efficient grid connection of offshore wind farms is part of Siemens' Environmental Portfolio. In fiscal 2009, revenue from the Portfolio totaled about EUR23 billion, making Siemens the world's largest supplier of ecofriendly technologies. In the same period, the company's products and solutions enabled customers to reduce their CO2 emissions by 210 million tons. This amount equals the combined annual CO2 emissions of New York, Tokyo, London and Berlin.

The Siemens Energy Sector is the world's leading supplier of a complete spectrum of products, services and solutions for the generation, transmission and distribution of power and for the extraction, conversion and transport of oil and gas. In fiscal 2009 (ended September 30), the Energy Sector had revenues of approximately EUR25.8 billion and received new orders totaling approximately EUR30 billion and posted a profit of EUR3.3 billion. On September 30, 2009, the Energy Sector had a work force of more than 85,100.