SIEMENS

Press Press Press Press

Energy Sector
Power Transmission Division

Erlangen, Germany, April 1, 2011

Energy trading hub: HVDC transmission link between Britain and the Netherlands goes into operation

Together with the operating company BritNed Development Ltd., Siemens Energy has placed the BritNed HVDC transmission link between Britain and the Netherlands into operation. BritNed is a joint venture of National Grid, the international electricity and gas company and one of the largest investor-owned utilities in the world, and TenneT, the Dutch grid operator based in Arnhem. The 260-km-long subsea cable connection with a transmission capacity of 1000 megawatts (MW) links the 400-kV grids in southern England and in the south of the Netherlands. The HVDC transmission system's converter station in the UK is located on the Isle of Grain in Kent in southeastern England, while the Dutch station is situated in Maasvlakte near Rotterdam. Besides ensuring greater stability in the European integrated network, BritNed will also serve as an energy trading hub and thus bring more competition into the grid.

"The BritNed HVDC transmission system we've installed will stabilize the power supply grids in both Britain and the Netherlands, and thus increase supply reliability in Europe. The advantages of low-loss HVDC transmission technology become fully apparent, especially in regard to long-distance subsea cable links," said Dr. Udo Niehage, CEO of the Power Transmission Division of Siemens Energy. The planned expansion of wind power in Britain will require an improved connection between the UK and continental Europe to better compensate major fluctuations in power generation expected in the future due to the increasing number of renewables. In addition, the new subsea cable connection is intended to improve the competition in northwestern Europe's grid and to get energy trading into higher gear. Starting on April 1, current will flow through the new "interconnector" with low-loss transmission, with the electricity markets of both countries setting the price for the electricity as well as the transmission direction. The HVDC transmission connection will thus meet the European Commission's requirements to interconnect power grids to a greater extent.

Siemens AG
Corporate Communications and Government Affairs
Wittelsbacherplatz 2, 80333 Munich
Germany

Reference number: EPT201104.054e

Media Relations: Dietrich Biester
Telephone: +49 9131 18-4974
E-mail: dietrich.biester@siemens.com
Siemens AG
Energy Sector - Power Transmission Division
Freyeslebenstr. 1, 91058 Erlangen, Germany

In BritNed Siemens was responsible for the design of the complete HVDC transmission system and installed both turnkey converter stations. The order's scope included the supply, installation, and commissioning of core components such as converter valves with directly light pulse-fired power thyristors, converter transformers, smoothing reactors, protection and control systems, and AC filters.

BritNed is a high-priority project for Europe's energy industry. The HVDC transmission link between Britain and the Netherlands will ensure more reliable energy supply and enable electricity and interconnector capacity. Capacity will be traded via energy auctions. It will result in a broader range of choices and give local power companies more options to participate in the European power markets. Market participants will have open access to BritNed's capacities that are allocated based on implicit auctions run by the Amsterdam Power Exchange (APX-ENDEX) and Unicorn on short-term explicit auctions. Compared to long-term capacity reservation systems, these allocation processes ensure a significantly higher level of transparency and open access to all market participants. The trading of electricity among various power markets also makes them more efficient and more competitive, and forms the basis for creating a standardized European electricity market and network.

In explicit auctions, preset transmission capacities are auctioned off separately from the electricity trading market. In these types of auctions customers can bid on and buy corresponding capacities, whose quantities, flow direction, and duration are predetermined. This model is currently used for electricity connections between France and Britain, the Netherlands and Belgium, and the Netherlands and Germany. In implicit auctions the transmission capacity along with the electricity to be transmitted is auctioned off. The allocated capacities and the flow direction will be determined over the course of the combined electricity trading and transmission capacity auctions so that the electricity, usually to the greatest extent possible, flows to the market region with the highest price – and the higher demand for power. APX-ENDEX will serve as the implicit auctioneer for BritNed. To this end it will use the existing auction market in the Netherlands and expand the existing auction house in Britain.

Energy-efficient high-voltage direct-current transmission technology (HVDC) is part of Siemens' Environmental Portfolio. In fiscal 2010, revenue from the Portfolio totaled about EUR28 billion, making Siemens the world's largest supplier of eco-friendly technologies. In the same period, our products and solutions enabled customers to reduce their carbon dioxide (CO_2) emissions by 270

Siemens AG
Corporate Communications and Government Affairs
Wittelsbacherplatz 2, 80333 Munich
Germany

Reference number: EPT201104.054e

Media Relations: Dietrich Biester
Telephone: +49 9131 18-4974
E-mail: dietrich.biester@siemens.com
Siemens AG
Energy Sector - Power Transmission Division
Freyeslebenstr. 1, 91058 Erlangen, Germany

million tons, an amount equal to the total annual CO_2 emissions of the megacities Hong Kong, London, New York, Tokyo, Delhi and Singapore.

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 2010 (ended September 30), the Energy Sector had revenues of approximately EUR25.5 billion and received new orders totaling more than EUR30.1 billion and posted a profit of more than EUR3.6 billion. On September 30, 2010, the Energy Sector had a work force of more than 88,000. Further information is available at: www.siemens.com/energy.

Siemens AG
Corporate Communications and Government Affairs
Wittelsbacherplatz 2, 80333 Munich
Germany

Reference number: EPT201104.054e

Media Relations: Dietrich Biester
Telephone: +49 9131 18-4974
E-mail: dietrich.biester@siemens.com
Siemens AG
Energy Sector - Power Transmission Division
Freyeslebenstr. 1, 91058 Erlangen, Germany