Siemens Energy at the Hanover trade show: Solutions for the energy efficient grid access of wind farms and innovative smart grid solutions

As part of its exhibition focus on grid access of wind farms and smart grids the Siemens Energy Sector presented solutions the energy efficient grid access of onshore and offshore wind farms as well as innovative solutions for setting up intelligent power supply networks, smart grids, at this year’s Hanover trade show. This included innovative high-voltage direct-current transmission systems to low-loss transport of large amounts of energy as well as energy management systems for the realization of virtual power plants through to integrated overall systems for load data acquisition and distribution network automation.

Siemens Energy has a unique wind power portfolio. Siemens not only manufactures and supplies high-tech wind turbines, the company also efficiently connect wind farms to the grid. This includes carrying out the necessary preliminary network studies. So Siemens presented its HVDC Plus system as its Highlight of the exhibition focus “Grid access”. HVDC Plus can be used for the energy-efficient connection of installations including offshore wind farms to the grid. The HVDC system operates on the basis of voltage-sourced converter (VSC) technology with insulated-gate bipolar transistors (IGBTs). HVDC Plus operates – in the same way as power plants – completely harmonic-free and therefore does not need the otherwise customary filter systems. This enables compact, space-saving overall system design. In addition, the “black start capability“ function enables the system to automatically restart a de-energized system with the aid of the other intact system. The energy efficient connection of offshore wind farms to the electrical power grid is an important feature of Siemens’ environmental portfolio, with which the company posted revenue totaling almost EUR19 billion in fiscal 2008. That is equivalent to approximately a quarter of Siemens total revenue.

Siemens also presented solutions for smart grids through to distribution networks. This covered condition monitoring and asset management, virtual power plants, intelligent substation and...
distribution network automation, smart metering and building automation. As part of the e-energy joint project “E-DeMa”, which Siemens recently kicked off together with RWE and other partners, the challenges facing the power supply network at the distribution network level were highlighted at the Hanover trade show in the sense of smart grids. This project focuses on the development and demonstration phase for distributed interconnected energy systems toward a future e-energy marketplace, taking grid-specific communications and data technology into consideration. Using the example of the distributed energy management system Dems. Siemens demonstrated in Hanover how distributed generating assets can be bundled to form a virtual power plant and optimized.

Siemens also showed that smart grids under the aspect of smart metering will also extend to power consumers with the aid of a solution comprising the intelligent consumption data acquisition and distribution network automation system Amis and the metering data management system Energy IP. With the aid of integrated electronic electricity meters the system will in the future enable the issue of monthly electricity bills so that consumers have a better overview and better control over their power consumption. In addition, a practical example was shown to demonstrate how the Swiss utility Arbon Energie deploys the Amis system to expand its distribution networks to form a smart grid. This essentially involves the consistent presentation of meter data acquisition processes and the presentation of voltage quality.

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 2008 (ended September 30), the Energy Sector had revenues of approximately EUR22.6 billion and received new orders totaling approximately EUR33.4 billion and posted a profit of EUR1.4 billion. On September 30, 2008, the Energy Sector had a work force of approximately 83,500. Further information is available at: www.siemens.com/energy.
Siemens Press photo


Caption:
At the Hanover Fair Siemens presented its HVDC Plus system as its Highlight of the exhibition focus “Grid access”. HVDC Plus can be used for the energy-efficient connection of installations including offshore wind farms to the grid. The HVDC Plus system is suitable for direct current links up to the 1,000 MW power range. The transmission system allows the low-loss transport of electrical energy from offshore wind farms to the coast and the economical and environmentally-friendly supply of power to oil platforms from the AC system on the mainland.

Siemens Press photo

Download press photo: www.siemens.com/Distribution/pictures/AMIS

Caption:
As a complete Smart Metering Solution Siemens presented Amis, an intelligent consumption data acquisition and the distribution network automation system Amis. With the aid of the integrated electronic electricity meters the system will in the future enable the issue of monthly electricity bills so that consumers have a better overview and better control over their power consumption.