Focus on smart grid solutions: Siemens and Viridity Energy to cooperate on virtual power plants

As part of the move to convert existing power supply networks into smart grids, Siemens Energy and the American energy service provider Viridity Energy, Conshohocken, Pennsylvania, are to cooperate in the field of virtual power plants. The two companies have now concluded a technology partnership to offer power supply companies and network operators the necessary technology for implementing virtual power plants. Virtual power plants provide opportunities in the energy market that are not open to operators of individual plants. These plants can be operated more efficiently and more economically in a network, to the benefit of operators of distributed generation plants. Within the framework of this operation Siemens will increase the presence of its decentralized energy management system DEMS in the U.S. market because Viridity is combining the decentralized energy management system DEMS from Siemens with its own applications so it can offer innovative energy solutions and services in this market.

In a virtual power plant, various distributed power generation systems such as engine-based heating power plants, wind turbines, photovoltaic systems, biogas plants and small hydropower plants are combined into a network and controlled as a single power plant. The core element is a decentralized energy management system such as DEMS from Siemens. With DEMS, distributed generating plants can be networked into a smart grid and operated economically with less ecological impact. Network solutions from Viridity also offer market players functions that allow them to manage the availability of energy in the grid more effectively.

A virtual power plant solution from Siemens and Viridity provides a more effective way to integrate distributed power generating plants into a power supply grid and represents a further step towards establishing a smart grid. The core element of the joint solution is the decentralized Siemens energy management system DEMS. This acts as the “brain” of a distributed power generator fleet,
networking the individual power generation units and controlling them centrally. It thus helps them to operate economically and with less ecological impact, and to harness the full potential of a virtual power plant. The system uses state-of-the-art information and communication technology to combine several individual plants. DEMS uses all important information such as weather forecasts, latest electricity prices and the momentary demand for energy, and draws up a deployment plan for all plants in the virtual power plant on the basis of this data.

“Power supply utilities and electricity customers are becoming increasingly aware of the advantages that distributed energy resources can have for the network. These advantages can be maximized if a way can be found to optimize distributed power generators as integrated, dynamic resources in the network," states Audrey Zibelman, President and CEO of Viridity Energy. “To be able to offer this service, we looked for a high quality decentralized energy management system that had already proved its value in practice. With DEMS from Siemens we found exactly the system that met these requirements," adds Zibelman. “By cooperation with partners like Viridity we will jointly offer innovative smart grid solutions based on our DEMS and thus continue to demonstrate the capabilities of our system in the U.S., too,” comments Ralf Christian, CEO of the Power Distribution Division in the Siemens Energy sector.

Viridity offer operators of distributed power generation plants a method of interconnecting their plants and allows optimized operation of controllable loads at large consumers such as universities, industrial companies and public authorities. Using the Siemens decentralized energy management system, Viridity sets up virtual power plants adapted to the specific requirements of the operators. Energy efficient and ecological solutions for setting up smart grids are part of the Siemens environmental portfolio with which the company earned revenues of nearly EUR19 billion in fiscal 2008, equivalent to about a quarter of Siemens’ total revenue.

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.