

## Husum WindEnergy 2008 – leading international wind energy trade show



Robert Müller, Branch Management Wind Energy at Beckhoff, has been dealing with automation and control systems for wind energy converters for more than 20 years.

The Husum WindEnergy was the scene of the world's largest wind energy trade show from 9<sup>th</sup> to 13<sup>th</sup> September 2008. Around 700 companies, manufacturers of wind turbines and sub-suppliers from 35 countries were presenting their solutions in four halls. Beckhoff was presenting its open automation solutions for wind turbines.

Robert Müller, Branch Management Wind Energy at Beckhoff, predicts healthy revenue growth in this segment: "A recent survey of manufacturers carried out by the German Wind Energy Institute (DEWI) indicated that last year the German wind industry clearly maintained its leading position in the world market. In 2007, German manufacturers and suppliers had a 28 percent share in worldwide sales totaling 22.1 billion euros. The export ratio increased from 74 percent in 2006 to more than 83 percent in 2007. With our PC- and EtherCAT-based control technology, we offer an integrated solution that has been tried and tested worldwide and covers pitch control, operation control for the tower and the nacelle, wind farm networking and the control room."



**Goldwind wind farm supplied electricity for the Olympics in Beijing.** The company Goldwind is the market leader among wind energy converter manufacturers in China. Goldwind supplied the wind energy converters – equipped with Beckhoff control technology – for the recently opened Beijing Guanting Wind Farm, which is the first wind farm in Beijing and a showpiece for clean energy generation for the 2008 Olympics: The wind farm meets 5 percent of the electricity demand of the Olympic stadium.

Standardized wind turbines communication  
according to IEC 61400-25

TwinCAT supports wind  
power industry standards



The "TwinCAT PLC IEC 61400-25" PLC library simplifies communication for monitoring and controlling wind turbines.

Beckhoff is announcing a new PLC library for its automation suite in "TwinCAT PLC IEC 61400-25". The IEC 61400-25 standard defines communication for monitoring and controlling wind turbines. Its integration in TwinCAT will simplify the control of heterogeneous wind farms considerably.

Regenerative energies are on the advance. More and more wind turbines are being installed worldwide, both onshore and offshore; most of them are organized into wind farms. In wind farms with wind turbines made by different manufactures, the IEC 61400-25 communication standard is intended to make communication possible. It is based on the IEC 61850 basic standard and will be available from mid-2009 as a PLC library as one of the TwinCAT supplementary products.

Like IEC 61850, IEC 61400-25 is object-oriented. This approach allows particularly simple configuration, diagnosis and maintenance of the communication. In addition to the IEC 61850 basic standard, the IEC 61400-25 contains descriptions for wind power-specific objects. However, the same communication services are used, as a result of which TwinCAT users can also access IEC 61850 data objects. The basic standard defines a general transmission protocol for protective and control equipment in medium and high voltage electrical substations.

The communication is physically based on Ethernet technology. TCP/IP and the Manufacturing Message Specification (MMS) have been implemented as protocols in TwinCAT PLC. The hierarchical data objects are communicated between a master control station and a wind turbine via MMS as the application layer.