KOMIPO

CUSTOMER

The Korean island of Jeju is no stranger to leading-edge energy technology. And, in 2015, Korea Midland Power Co. Ltd (KOMIPO) created a new 21MW wind power plant consisting of seven turbines on the island. In order to tackle the classic renewables problem of fluctuations in supply, the new plant was designed to include an Energy Storage System (ESS) equipped with a high-performance lithium-ion cell technology Battery Management System (BMS).

CHALLENGES

A secure and reliable Electrical Equipment Control and Monitoring System (ECMS) and a Power Management System (PMS) to visualize and control the electrical equipment and connect to the ESS was needed. The solution should offer the flexibility to automate the energy storage processes in the PMS. At the same time the operator should be able to adapt these processes to meet current circumstances manually.

Jun Seon Lee, Project Manager at KOMIPO says: "We were convinced by the bid submitted by the NEOPIS team because of their expertise in our sector".

SOLUTION

To control the seven wind turbines COPA-DATA partner NEOPIS provided a system based on zenon using the IEC 61850 protocol. Hyeon Hui Choe, Manager at NEOPIS, explains: "zenon has a proven track record in the energy industry and supports the crucial communication protocols IEC 61850, IEC 60870 and IEC 61400-25. zenon is also a highly flexible solution that enables us to meet the stringent requirements of this control and management solution and deliver the redundancy needed."

The PMS was also implemented by NEOPIS using zenon. It provides control over how much energy is stored in the batteries and how much is transferred directly to the grid.

TECHNOLOGY

zenon fulfils the requirements of all included subsystems – and delivers highly reliable redundancy between the ECMS & PMS Primary Server and the ECMS & PMS Secondary Server to underwrite the security of supply. Jun Seon Lee states: "zenon has proven to be a highly intuitive system for the control and operation of the plant. It has enabled us to automate the processes around energy storage in such a way that we can optimize revenue generation."

BENEFITS

Another key advantage of zenon is its integrated Soft PLC. NEOPIS programmed unique functions to address the specific requirements of this project. Hyeon Hui Choe explains: "zenon Logic provides extremely reliable control while being a far more cost-effective solution than any other viable alternative. What's most exciting for us is that zenon can fulfil many roles on one physical device: soft PLC, HMI, database server and data analysis – all backed up by flexible and rapidly configurable out-of-the-box redundancy options. This makes zenon our first choice for projects of this kind."

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