



zenon and straton supervise the San Gregorio Magno wind farm

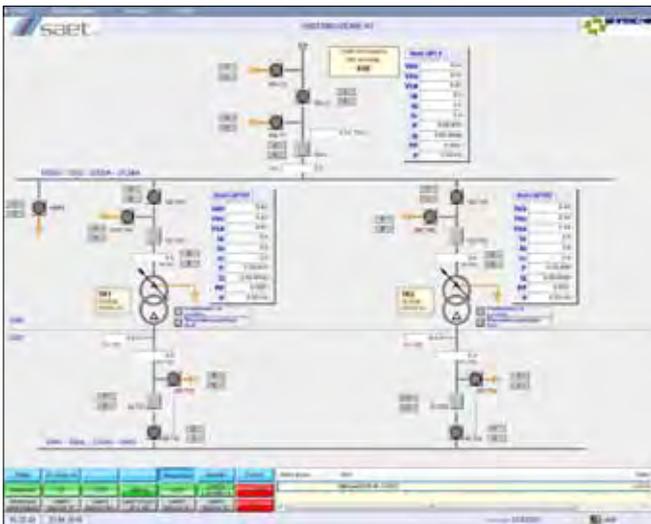
At the new wind farm in San Gregorio Magno (SA), 17 turbines have been installed, each of which produces 2.5 MW, resulting in the supply of a total of 42.5 MW of electrical energy to the transmission grid.

In order to bring this project into being, SAET was chosen; a firm that has been operating with success for over forty years in the Energy & Environment sector. Thanks to its consolidated experience, its constant technological development and its ability to integrate its specific know-how with the different expertise and disciplines that are needed in this field, SAET was able to successfully deliver a complete turnkey operational facility.

Because it specializes in electrical and automation systems for process systems (waste to energy plants, compost systems, biomass conversion, etc), SAET was able to supply a solution

that included: a 30kV station and 30kV cables for the turbines, 150/30kV substation with 42.5 MW of power, ENEL Busbar extension, 150kV underground cable and a new geographic information system, 150kV GIS bay, with ENEL Primary. Thanks to this provision, the energy accumulated by the wind farm through a 30kV grid is taken to a switching station. From there, it is channeled through three tracts 15 km in length to reach the 150/30kV substation situated close to the ENEL 150kV substation at Buccino.

The installation comes complete with auxiliaries, IEC



61850 protection relays, a SCADA system and a power quality recorder. SAET decided to entrust the substation system supervision tasks to the COPA-DATA zenon and straton software. The integration of the SCADA with the national grid is completed by way of the gateway with the IEC 60870-104 protocol integrated into zenon and by way of the events recording in COMTRADE format.

The zenon server communicates by way of the IEC 61850 protocol and the Modbus TCP with approximately 30 GE protection relays. Thanks to this installation, the supervision PC guarantees the following information: control of the electrical distribution with possibility of modifying the switch status; control of the medium voltage switch panel; single line overview; control of the general services; wind generator diagnostics; historical trends; and total Ethernet network diagnostics.

At the same time, straton has its own IEC 61850 driver which, using IEC 61131-3 soft-logic, manages the load disconnection logic. Therefore, in the event that the network con-

figuration were to require it, it is possible to perform a disconnection of the farms using straton.

The zenon HMI/SCADA solution has shown itself to be particularly suited to the management of the electrical substation. Thanks to the flexibility and the adaptability of zenon, the client was provided with a custom solution able to guarantee specific functions. For example: by way of the native drivers such as the IEC 61850 or the Modbus TCP, communication with and among the different devices in the field has been made simple and effective. The IEC 60870-104 Slave gateway makes the process data drawn from the wind farm available to the remote control centers, which gain access by way of the IEC 60870-104 Master. The perfect integration of the straton soft-logic in zenon has enabled additional functions to be obtained – such as load disconnection, which may be programmed through the IEC 61131-3 logic – with extreme ease. In addition, the system allows remote control using the Remote Desktop integrated in zenon.