SCATEX REMS

Renewable Energy Management Systems

Efacec background

Efacec owns a notable track record in the provision of automation and energy management systems for the segment of renewable energies.

Back in 1999, Efacec supplied several hydro power plant automation systems, as well as SCADA systems for their control centres, in Portugal. Between 2001 and 2017, Efacec reached other geographies with similar technology for hydro power plants, namely in Iceland, Colombia, Morocco, Tunisia and Tanzania.

In 2017, Efacec installed a SCADA system for the nation-wide control centre in Portugal, to manage all hydro power plants, corresponding to over 5 GW of installed power. In 2018, Efacec launched an advanced SCADA system targeted to also manage photovoltaic, wind and geothermal power plants, as well as energy storage assets. The new solution is called **ScateX# REMS**, serving the renewable energy management systems segment.

About ScateX# REMS

ScateX# REMS provides suitable management features to allow promoters operating renewable assets to early detect any system faults and to maximize the system economic and technical performance, namely by considering restrictions imposed by grid operators, as well as market and environmental constraints.

ScateX# REMS provides sophisticated editing tools suitable to design each client's database, as well as schematic or tabular diagrams. Any data describing the system is classified according to its geographical or logical area, therefore providing an easy and quick way to reach alarms and other events, or relevant data through user friendly filtering. The human-machine interface runs on any available web browser, providing sophisticated navigation tools, namely panning and zooming associated to decluttering mechanisms.

Key Features

- Open and scalable solution, suitable to provide multiple configurations
- Support of big databases, over 1 million data points
- Compliance with NERC CIP
- Integration with remote control devices from any vendor, through standard communication protocols, comprising but not being limited to:
  - IEC 60870-5-101/104
  - IEC 61850
  - MODBUS
  - SNMP
  - DNP 3.0
  - OPC UA Server
  - OPC UA Client
  - Kafka Event Streaming
- Integration with other control centres via the IEC 60870-6 communication protocol, known as ICCP
- Asset management
- Field teams management
- Renewable generation forecast

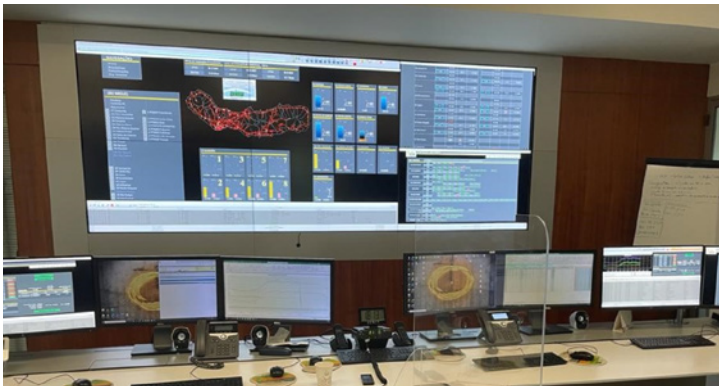
Benefits

- Centralised management of all renewable assets
- Secure remote operation
- Unified operation and maintenance of assets
- Flexibility to customize solutions with minimum configuration
- Scalable solution, from a renewable fleet of few MW to an extended renewable fleet of several GW
- Open and vendor neutral solution, suitable for the integration of any third-party controller or data gateway
- Upstream vendor's wind turbines and other assets performance awareness, for liability purposes
- Downstream business partners' energy production awareness and forecast, for PPA off-takers liability purposes
- Suitability to cope with operational restrictions imposed by the energy system operator, as well as with environmental restrictions and market conditions

Efacec has a broad range of other products which may add further flexibility to renewable energy management systems. Efacec provides communication gateways and protocol converters, whose technology is based on the **CLP 500** proven solution. This solution has multiple applications, as it is also used for substation automation, seamlessly integrating Efacec's and third-party's data acquisition units, bay control units and protection relays.

Wind turbine dashboard

Hydro turbine dashboard



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