

CASE STUDY

Controlling and monitoring Edisun Power's largest solar farm

Edisun Power Europe AG use Netcontrol automation solutions at the 49 MW Mogadouro solar farm in Portugal



The large-scale solar plant is situated close to the Douro river in the northeast of Portugal, covering an area of 65 hectares. It is anticipated to produce approximately 80 MWh of electricity per annum, which is enough to service the needs of a town of about 20,000 inhabitants.

Smartenergy Invest AG were responsible for implementing the project, with the construction undertaken by the Portuguese electrical engineering company, Efacec. Netcontrol provided the SCADA gateway and local HMI for the solar plant, and Efacec handled the installation along with building the on-screen pictures and the associated databases with support from Netcontrol.

Before this project, Efacec had successfully installed Netcontrol's SCADA gateway, control and monitoring equipment for wind and solar farms in other locations across Portugal, so it was an obvious choice to use the same equipment at the Mogadouro solar farm:

- the Netcon [GW502-IM](#) substation gateway, and
- the [Netcon 500 OP](#), a substation HMI system to control and monitor the on-site electrical substation.

Connection to the bay controllers and protection devices is directly through IEC 61850. Further information is obtained from power meters and other devices via Modbus and IEC 60870-5-101. The gateway also uses IEC 60870-5-104 to communicate with the Portuguese National Grid dispatching centre.

Because of its size, the solar farm employs a number of voltage levels across the site, with the final connection to the grid being made via a step-up transformer at 63 kV.



The GW502-iM was supplied with an SMS option which alerts technical staff via a GSM modem when there are anomalies with the plant. It was also equipped with a GPS receiver to enable the HMI to time-stamp events accurately.

Cyber security, firewalls, port hardening and VPNs are built into the GW502-iM substation gateway, making it an ideal choice for modern substation automation systems.

Efacec have installed the GW502-iM Scada gateway and the Netcon 500 OP HMI at a number of other substations across Portugal, including:

- Marvila II 20 MVA wind farm
- Ourika 40 MVA solar farm
- Moimenta substation and associated 170 MVA wind farm.

Click [here](#) for a video showing the construction of the Mogadouro solar farm.



EFACEC

Edifício Q61 D. Amélia, Quinta da Fonte Office Park
Rua Victor Câmara 2
2770-229 Paço de Arcos
Oeiras, Portugal

NETCONTROL

Unit 4E, Bramhall Moor Technology Park
Pepper Road, Hazel Grove
Cheshire, England

