

BOMEN SOLAR FARM



Representing a \$188 million investment in construction and employment in the region, the Bomen Solar Farm, near the NSW town of Wagga Wagga, was completed on time and on budget by its contractor, Beon Energy Solutions.

With Bomen generating enough power to meet the needs of around 36,000 Australian homes, this the largest solar farm project that AZZO has been a part of to-date.

The solution

- Full robust and redundant network configuration utilising Ring Management protocols and redundant Hot Standby PLC's
- Full integration of 33kV HV Bomen Collector Sub-Station SCADA , mimicking all control and monitoring functions within Power SCADA Operations (PSO) and ION7400 for Power Quality Measurement (PQM) at Point of Connection (POC) meter
- Detailed assistance with various stakeholders for Hold Point Testing with NSP (Transgrid)
- Enhancements for AEMO Dispatch engine, incorporating AEMO compliance FTP processing and integration into PSO
- Full secure dedicated VPN and remote access to PME Historian DB and PSO Live data integration for 3rd Party ODBC & OPC access
- Extensive active and reactive power control methodology & implementation expanded scope
- ION9000 POC meter at 132kV with SMA PPC utilising High Speed Registers for closed loop control integration
- Performance Ratio calculated daily, monthly, annually
- Detailed Nextracker Control Unit Monitoring & Control processing of ~40K data points
- Advanced Reporting and Dashboards (PME)

The challenge

Throughout this project, AZZO 'thought like owners' – to ensure the solar farm's control system would be straightforward to manage and not distract from any normal operations.

This required us to provide a proactive response to a number of various challenges, which meant utilising each of AZZO's 4 core solutions at different stages throughout the project. This included the integration of equipment from various manufacturers, under very tight timeframes – one more example of AZZO bringing technology together.



KEY FEATURES

- 1 AZZO designed and implemented Bomen's SCADA system and network communications
- 2 AZZO's SCADA system created a single operation and maintenance interface, bringing together all the systems throughout Bomen Solar Farm
- 3 Additionally, AZZO's power control and monitoring system consolidates SMA PPC and MVPS, while providing remote access for maintenance of SMA and NEXTracker

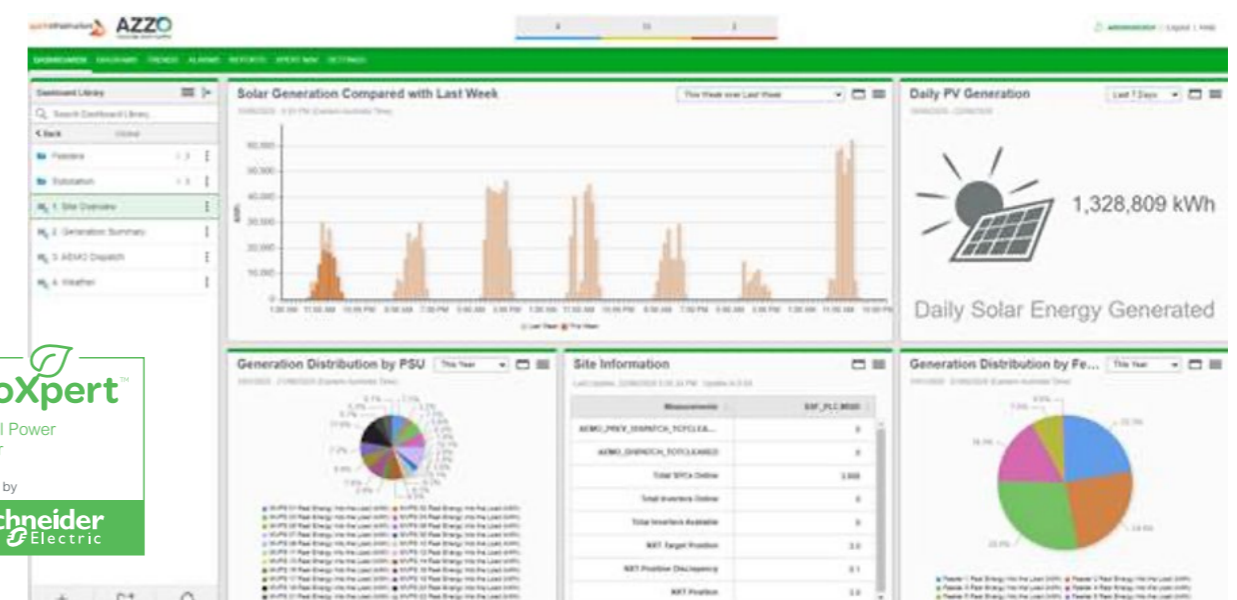




Results

AZZO WAS AT THE FOREFRONT OF IMPLEMENTING NEW FUNCTIONS IN THE CONTROL SYSTEM TO HELP MAKE THE BOMEN SOLAR FARM MORE RELIABLE IN THE ELECTRICAL NETWORK. THIS MEANT IMPLEMENTING FUNCTIONS FOR AEMO THAT NO OTHER SOLAR FARM (THAT WE KNOW OF) HAS INTRODUCED.

- Bomen Solar Farm is a 100MWac and 120MWdc solar farm consisting of approximately 309,000 Photo Voltaic Modules mounted in a 3,900 row single axis Nextracker tracking system
- Communications algorithms to ensure reliable and high-speed real time and data capturing
- There is a single operations and maintenance building, a 132kV/33kV Bomen collector substation, 22 SMA medium voltage power station units and 3 weather stations
- The Bomen Solar Farm project included deployment of a Communications Network and a SCADA system
- These integrate the key system components, including the interconnecting 132kV/33kV substation switchboard, SMA power plant controller (PPC), medium voltage power stations units (MVPS), Nextracker tracking systems, meteorological stations and power quality metering
- The SCADA system integrates the above key components into a single Power Control and Monitoring system for the power plant owner, Spark, and the operation and maintenance provider, Beon ES.
- Access has also been provided for ongoing maintenance by key suppliers – SMA for inverters and Nextracker for the tracking system



AZZO

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Contact us to
see what we can
do together

AZZO (USA)
330 Changebridge Road
Suite 101, Pine Brook
NJ 07058
USA
+1 973 575 5032

AZZO (AUSTRALIA)
B22, 6 MAB Eastern Promenade
Tonsley
SA 5042
Australia
+61 1300 00 2996

solutions@azzo.com
azzo.com

