

Case Study: Port Authority Off-Grid Security & Communications

System Stats

Application: Off-Grid System

Location: Pilbara, WA

Installed: Dec 2019

Key Brands: Selectronic, REC Solar, BYD, Clenergy

Load Analysis

Ave Summer Demand: 71kWh/day

Ave Winter Demand: 67kWh/day



Objectives & Site Considerations

Reliable and stable power was required for critical surveillance & access control equipment - including site access gates and turnstiles - over two remote Pilbara port sites, which export vast quantities of high quality minerals.

Mains power wasn't readily available, and powering solely via diesel generators was cost prohibitive and a potential power quality risk to sensitive equipment.

Reliability, clean energy, and the ability to achieve complete redundancy in the event of extreme weather events was critical for on-going operations.

System Design

Given the sites remoteness, which also lies within a wind region D classification, specific system design and fabrication was required to meet all relevant engineering principles.

Custom equipment housing included HVAC to provide a stable environment for system operation, ensuring longevity as constant high temperatures were a concern.

- 162 x REC 320W Modules (51.84kW)
- Transverse Strip Ground Mount Array
- Selectronic SelectSun 40k PV Inverter
- 45kW 1-3P Selectronic Inv/Ch Output
- 455kWh L-ion BYD Battery Storage
- 2 x IP55 Customised Enclosures

Project Outcome

Off site prefabrication and comprehensive system testing was completed before deployment ensuring successful project fulfilment. This approach also reduced freight costs and on site operational disturbance.

15.8 tonne of CO2 will be saved for each year of system operation.

The installation provides 100% self sufficiency to the site, ensuring full operations can continue without the intervention of personnel.

At the time of installation, this is the largest BYD B-Box Pro installation in Australia

Off-Grid Energy Australia

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