

Case Study: Microgrid System Luxury Farm Estate

System Stats

Application: Off-Grid, Multiple Building Microgrid System

Location: Robertson, NSW

Installed: Dec 2015

Key Brands: SMA, Trina Solar, BAE, FG Wilson, Clenergy

Load Analysis

Ave Demand: 210kWh/day

Phase Requirement: 3 Phase

Peak Power: 257A per phase



Objectives & Site Considerations

The system was required to provide the equivalent reliability, capacity (kW), and energy (kWh) availability of the grid, whilst maintaining an economic advantage.

The buildings on the property which required power included horse stables, heated swimming pool, bore pump, workshop, 2x guesthouses, painters studio, and of course the main residence.

No consistent view of the solar array or equipment building, hear no noise from the backup generator at the main living areas of the property, and not disturb the resident wombats.

System Design

The system design provides an average yearly solar contribution of 117%, peak delivery capacity of 300A per phase, with a 250kVA super silenced generator backup. AC coupled configuration allows the inverter/charger, solar inverters and generator to 'layer' and provide high peak power capacity.

- 264 x Trina 260W Modules (68kW)
- Ground mounted frames at 30° pitch
- 3 x SMA STP2000TL Solar Inverters
- 18 x SMA SI8.0 Inv/Ch (144kW)
- 144 x BAE PVV1800 VRLA Batteries
- 250kVA FG Wilson diesel generator
- SMA Multiclusster 36 Box switchboard
- SMA Webbox Monitoring system

Project Outcome

Off site assembly of the containerised equipment housing allowed for cost reduction, quality control, and passive cooling techniques to be included. Significant ground-works removed system visibility from the main residence. Generator sound attenuation achieved 65dba at 7m distance, and efforts were made to ensure a high-quality aesthetic.

"Communication was excellent, the team was professional and had a great attention-to-detail. They made sure every step of the process was delivered on time, and without compromise."

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