

Renewable Energy and Environmentally Sustainable Design Case Studies

Mt Rothwell Biodiversity Interpretation Centre

– Off Grid AC Coupled System

Site:

Little River, Victoria

Dates:

- System Design: October 2012
- System Installation: December 2012
- System Commissioned: December 2012

Client:

Mt Rothwell Biodiversity Interpretation Centre

Project Goals:

Design, supply and install an off grid or Stand-alone power system for new classroom & research facility at the wildlife reserve.

[RAPS = Remote Area Power System]

Project Features:

- Roof-mounted photovoltaic array consisting of 12 x 240W Winaico poly PV panels
- 8 x 6V Exide Energystore II wet acid batteries
- SP Pro 7.5kW 48V interactive inverter/charger
- Kaco Powador 3002 solar inverter
- Complete system documentation including maintenance schedule and log sheets.
- PV System size: 2880 Wp
- Battery capacity: 48V 1080Ah
- Average Load = 7kWh/day
- Estimated Average Solar Output = 10kWh/day

Locating the solar array on the wildlife reserve involved shade testing & assessment using the Solmetric SunEye, due to the tall gum trees close to the new buildings. Options considered included roof versus ground mounting, structural certifications for pole mounts, maintenance issues, trenching for underground cabling, logistics and budget constraints.

The final solution was roof mounting the solar array on the classroom with the client committing to regular maintenance of the nearby trees. A new control shed was installed close to the classroom for the battery bank and control gear.

The system was sized to suit loads in the classroom including split system air conditioners and a small kitchen. The AC coupled system allows for upgrading and has the capacity to be connected to supply other small buildings nearby via underground AC cable.



PV Panels on Roof



Control Shed & Rear of PV Panels



Inverters & Control



Battery Box

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Testimonial:

“ Our reserve has been established to preserve the environment and the highly threatened species that live within it so for us to extend our infrastructure to expand breeding research and interpretation work we sought after a company that would guide us on the best solar system setup that would cater for our extensive requirements. It was great to work with Miwa and Duncan who always provided excellent service that fitted within our tight schedules and they ensured that we had all the information that we required to assist in the use, function and benefits of the setup. I would recommend Going Solar to everyone - they are outstanding and very professional. The system fitted has now become a key feature of our carbon neutral facilities including water tanks, compost loos and eco-friendly buildings and now it is all complemented by our wonderful “off the grid” solar system fitted by the Going Solar team. “

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**Annette Rypalski
Manager**

Mt Rothwell Biodiversity Interpretation Centre

Project Team:

- Miwa Tominaga, System Designer, Going Solar
- Duncan Macgregor, Lead Installer, Going Solar
- Mark Colwell, Installer, Going Solar
- Andy Savidge, Installer, Going Solar
- Jake Gilchrist, Electrical Contractor

Further Information:

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Inside Control Shed