

Renewable Energy and Environmentally Sustainable Design

Case Studies

Hybrid system

- Solar grid connect with battery back-up

Site:

Coburg, Victoria

Dates:

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

Client:

John Levy

Project Goals:

Design, supply and install a hybrid system (Solar grid connect with battery back-up) for a household. The installation was coordinated during the house renovation.

Project Features:

- Roof-mounted photovoltaic array consisting of 16 x 170W Schott PV panels
- 12 x 2V 770Ah BAE solar gel deep cycle batteries
- Custom built battery and control gear cabinet
- Selectronic SP Pro 3kW 24V interactive inverter/charger SPMC240-AU
- Kaco Powador 3002 solar inverter
- Complete system documentation including maintenance schedule and log sheets.
- PV System size: 2880 Wp
- Battery capacity: 24V 770Ah
- Average Load = 7kWh/day
- Estimated Average Solar Output = 10kWh/day
- AC coupled configuration
- Australian made SP Pro inverter custom programmed to run off battery during night and only use grid power if the battery state of charge reduces to a programmed set point.
- During the day, if the generated solar power is not sufficient to supply household loads, the SP Pro will automatically provide the required power from the battery or the grid. The percentage of power from each source is also fully programmable.
- One of the SP Pro relay outputs was set up to turn on a warning LED light in the living room to let householders know when the grid power goes down and the house is running on battery back-up (otherwise the power switchover is instant and would not be noticeable)
- Switchboard modifications made to have only essential loads on battery back-up



PV Panels on Roof



Inverters & Control board



Custom build Control (upper) & Battery Cabinet

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Testimonial:

"When I decided to upgrade my system from a simple grid connect to include a battery backup I had very little idea what was involved. Throughout the process I found the team at Going Solar to be a great resource and very patient in dealing with my numerous queries. Going Solar were able to arrange for pre-wiring during the early stages of my build and were even able to construct cabinets to protect the batteries and electronics required to run the system when there was no off the shelf solution. Throughout the process their communication was good and I received all the assistance that I needed in setting up the installation once all of the components were in place. "

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John Levy

Project Team:

- Duncan Macgregor, System Designer, Lead Installer, Going Solar
- Mark Colwell, Installer, Going Solar
- Andy Savidge, Installer, Going Solar
- Glenn Robertson, Electrical Contractor
- Luke Adams, Electrical Contractor

Further Information:

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Custom Cabinet - outdoor