

Off-grid energy storage port vila

Two houses; a large swimming pool with water pumps and filtration system; fridges and freezers; fans; lighting; air conditioning, and a beautiful tree house which has all the luxury of home. The owners of this property in Port Vila, in the Republic of Vanuatu – which lies in the Pacific Ocean a thousand miles off the coast of Australia – wanted a private off-grid energy system, without compromise to their lifestyle, and which would have a design life in excess of twenty years.

That challenge was taken up by Solar Fiji who engineered, designed and installed what is one of the biggest residential Off-Grid Solar Power Systems in the South Pacific. Solar Fiji are based in Suva, and work alongside The Green Power Company in Melbourne, Australia.

The energy from 48 solar panels which provide over 22kWp is stored in a SimpliPhi Lithium Ferrous battery bank with a capacity of just over 60kWh. Two Victron Quattro inverter/chargers provide 30kVA of power; and the system includes two Fronius Primo 8.2kWp AC Inverters. Oh, and there’s a 15kVA back-up generator. This diverse range of equipment by different manufacturers can be harmonised into one optimal system largely thanks to the compatibility testing and support of the Victron Energy components which lie at the heart of the installation.

For example, the Fronius Inverters offer maximum efficiency by taking power directly from the PV panels and supplying the energy as domestic AC. When supply is greater than demand excess power is fed to the Quattro and used to recharge the battery bank – overcharging is avoided by the frequency shifting capability of the Quattro, which reduces the Fronius supply in accordance with the battery voltage.

Notice that the batteries in this case are manufactured by SimpliPhi …compatibility between Victron Energy components and this Lithium Ferrous storage bank is also supported. The batteries get the power they need, quickly, efficiently and safely.

The backup generator might be required during extended periods of gloomy weather – even in Vanuatu a little rain must fall. If whilst the generator is running there is a surge in demand of power which exceeds the output of the generator, the Quattro’s PowerAssist feature will immediately meet that demand – supplementing the supply with inverter power from the battery bank.

The purpose of the Color Control GX – and all Victron’s GX devices – is to allow the installation’s components to talk to each other, continuously optimising power harvest, storage and supply – across manufacturers – and changing dynamically according to the status of the system.

The installation was undertaken by Pita Tamani, Iliesa Lotawa, Tony Pecora and commissioned by Ciaran

Granger.

It comprises the following equipment:

May 5

Oct 8

Feb 21

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Email: energystorage2000@gmail.com

WhatsApp: 8613816583346

