

Off Grid Power System

From experience we found that the off grid system was critical to living full time and being able to relocate to different environments. We initially went down a road of installing products not supported/supplied in New Zealand. This led to some very critical moments.

The key area was safety especially with large storage lithium batteries and the requirements of charging and discharging. The Marine industry have got their shit together and produced a standard.

In Australia and New Zealand, marine lithium battery installations must comply with [AS/NZS 3004.2:2014](#), which covers high-current DC systems on recreational vessels under 24m.

Key requirements include using Lithium Iron Phosphate chemistry, a robust Battery Management System (BMS) for monitoring cell voltage/temperature, mandatory automatic disconnection of charging sources during faults, and IP65 or higher waterproofing.

We have installed the system to meet the standard with the help of Enertec Marine & RV in the design and supply of product.

The 5th Wheel has an off-grid power system consisting of:

- Solar Panels: 1280 watts made up of 4 x 320 watt panels
- Solar Controller: Victron BlueSolar Charger MPPT 150/45 A04D
- Invertor 120 volt: Victron MultiPlus 24/3000/70-50 120V 2712
- Invertor 230 volt: Victron Smart Invertor 24/2000/230 A292
- DC – DC Convertor: Victron Orion Smart 24V/12V Isolated A3C2
- AC – DC Convertor: 120V ac to 24V DC
- AC – DC Convertor: 120V ac to 12V DC
- Lithium DC Charger: Victron Blue Smart IP22 24/16 230V
- Lithium 24v Batteries: Enertec Juice LiFePo4 lithium battery 24v 200AH (2 installed)
- Lithium 12v Battery: Enertec Juice JRVLI-12120PRO 12V 120AH (House battery)
- SMS Power monitor: EZY Switch
- Generator Gas: Onan 5KVA 120 volt