BATTERY MANAGEMENT AND INVERTER USAGE GUIDE:

Many caravan and motorhome users have high expectations regarding the performance of batteries and solar panels in these products. Optimal performance of these systems depends on various factors, including the types of appliances used and their specific power consumption, which can fluctuate. It's important to understand that the batteries and solar panels in your caravan or motorhome are a finite power resource. They provide a limited power supply, tailored for the mobile environment and your specific usage needs.

You do not have an infinite power source:

For example, a fridge in your caravan might draw 13 amps per hour initially to cool down. Once it reaches the desired temperature, this usage may drop to 6 amps per hour. However, if the fridge door is frequently opened, it will require more power to maintain its temperature, therefore increasing the amp draw from your battery. Efficiently utilising your batteries, along with solar panels or other power sources such as 240-volt inputs and generators, is fundamentally about balancing POWER OUT versus POWER IN and considering Battery Storage capacity. If you run multiple devices on the battery, such as a fridge and an air conditioner, most setups will not sustain this load for extended periods like two, three, or ten hours.

Offgrid Camping:

Offgrid Camping can be fun but requires careful planning around the power and other resources you will need. Utilise a combination of things to heat, cool, cook and light the van. For example, use gas for cooking and hot water. Ensure the 240-volt switch on your hot water system (HWS) is turned off, as it may automatically switch to 240 volts if you have an inverter. The same applies to a fridge that runs on gas; make sure the automatic switch is off and manually select gas. If your fridge is set to auto, it will switch to a 240-volt source if available, including from an inverter with a battery.

For heating, we recommend a gas or diesel heater. For cooling, a 12-volt fan is the most efficient option. While it's possible to run an air conditioner if wired correctly, it will very quickly deplete your battery due to its high power draw. To run an air conditioner for extended periods, you'll need a generator or a 240-volt power source from a caravan park or your home.

Please use the following guide to understand the approximate amperage consumption for common appliances when using an inverter or just a normal battery without an inverter. This is a general estimate; actual consumption may depend on many variables including brands, size of appliances, weather conditions etc.

Appliance	Approximate Amps Per Hour
LED Light (10W)	1 A
Laptop (50W)	4.5 A
Television (100W)	8.5 A
Refrigerator (150W)	12.5 A
Microwave (700W)	60 A
Coffee Maker (1000W)	85 A
Air Conditioner (1200W)	100 A
Heater (1500W)	125 A

Charging Information:

- **200W Solar Panels:** Under optimal conditions, these panels can provide approximately 10 amps of charge per hour, with full summer sun on a cloud free day. If you are parked under a tree, consider carrying a foldable solar panel that can be plugged into your van using an external "Anderson Plug" on the side.
- **AC Chargers:** Provide approximately 30 amps of charge per hour.
- **DC Chargers:** Provide approximately 30 amps of charge per hour.

Lithium Batteries:

Lithium batteries will shut down if their voltage drops too low, requiring a jump start to reactivate them. To prevent this, it's important to monitor your battery levels regularly. If your battery does shut down, use a charger compatible with lithium batteries to recharge it. If you're unsure how to handle this, contact your nearest Jayco Service agent or a qualified mechanic for assistance.

Examples of power out versus power in:

You're off-grid and want to run your van with two 200-watt solar panels and two 120-amp lithium batteries. On a 30-degree day, you get optimal power input into your solar panels.

Scenario:

- **Compressor Fridge:**
  - Average draw: 5 amps per hour x 24 hours = 120 amps
  - Power left after 24 hours: 80 amps (leaving 40 amps in the battery to prevent it from going flat and entering sleep mode)
- **Lights:**
  - Two lights running for 5 hours at 1 amp per hour each = 10 amps
- **Solar Panels:**
  - Two panels providing 20 amps per hour during the best part of the sunny day (8 hours) = 160 amps
- **Air Conditioner:**
  - You could run the air conditioner for two hours, but this would leave insufficient power to run the fridge the next day.

Important Notice:

Please ensure that you have a comprehensive understanding of your specific inverter model and battery and solar specifications. This guide provides general information and may not reflect the precise requirements of your equipment. Always refer to the manufacturer's guidelines and consult with a professional if you are uncertain.