

# Chapter 2 Power Sources



## Batteries

Your batteries are the \_\_\_\_\_ of your power system.

They are the only power source that \_\_\_\_\_ energy to be used for later when no other power sources are available.

Ways to charge batteries:

- \_\_\_\_\_
- \_\_\_\_\_
- \_\_\_\_\_
- \_\_\_\_\_

The most common battery type is \_\_\_\_\_ or \_\_\_\_\_.

These batteries are \_\_\_\_\_ and \_\_\_\_\_ (in a good way).

Qualities: They are \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_, and they need to be \_\_\_\_\_ to the outside.

Use \_\_\_\_\_ batteries for extended off-grid stays.

Qualities: They are \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_ their power, and don't need to be \_\_\_\_\_ to the outside.

Lithium batteries need a \_\_\_\_\_ to protect them.

The size of your battery bank will affect which \_\_\_\_\_ you can run, and how \_\_\_\_\_ you can run them for.

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## | Shore Power

When connected to a 30-amp or 50-amp pedestal at a campground, it enables \_\_\_\_\_ power natively throughout the rig. Here's what happens:

- All your household \_\_\_\_\_ are energized.
- Certain appliances switch over from \_\_\_\_\_ and from 12 volt to 120 volt.
- You can run high draw \_\_\_\_\_ like air conditioner, microwave, and convection oven.
- Your \_\_\_\_\_ converts the 120-volt into 12-volt power to run low voltage appliances.
- Your converter charges the \_\_\_\_\_ until full.

## | Generator

A generator is just a tiny, portable \_\_\_\_\_ that runs on gas or propane to create energy.

\_\_\_\_\_ or open frame generators create big nasty raw power.

\_\_\_\_\_ generators not only have built in inverters, but create very clean and stable power.

Your generator's \_\_\_\_\_ output will determine what you can run inside the RV while connected.

Generators do create \_\_\_\_\_ and \_\_\_\_\_ fumes which can bother your neighbors.

Some campgrounds have specific \_\_\_\_\_ around generator usage.

Did you know that \_\_\_\_\_ altitude affects your generator?

You'll lose 10 percent of the rated output every time you gain \_\_\_\_\_ feet in altitude.

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## Tow Vehicle Pigtail

Here's what happens when you connect your pigtail to your tow vehicle:

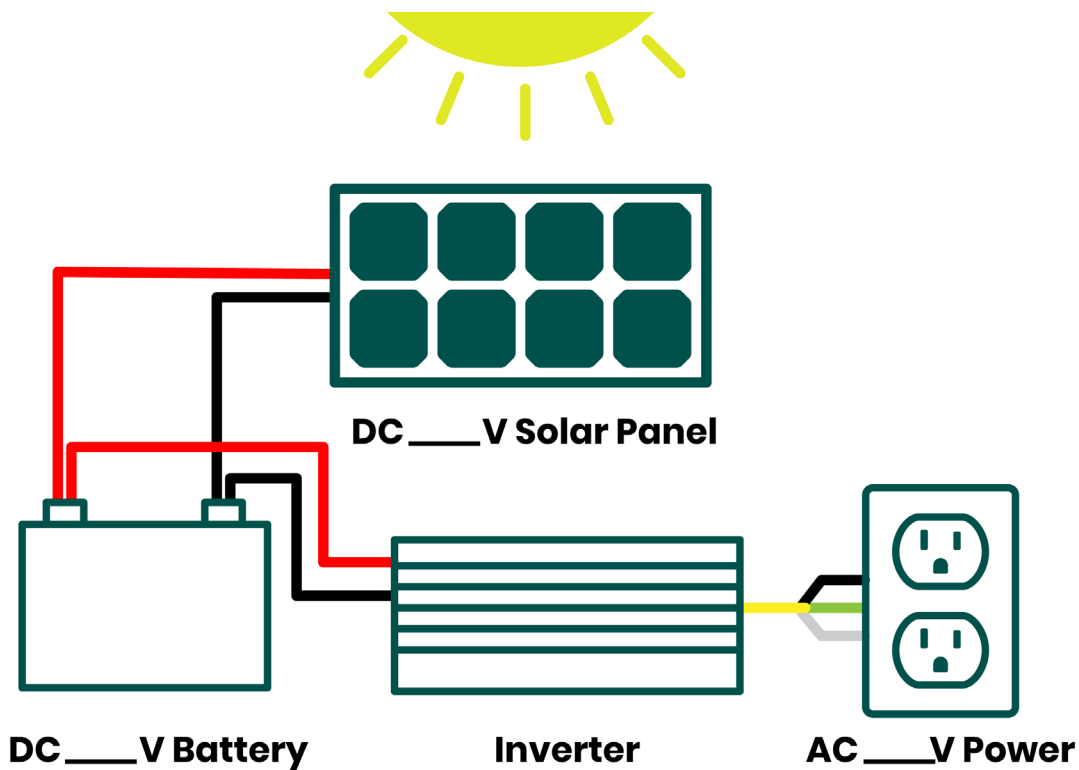
- It enables \_\_\_\_\_ lights, turn \_\_\_\_\_, brake lights, and \_\_\_\_\_ lights on the RV.
- The vehicle can communicate with your RV \_\_\_\_\_ to slow down more safely.
- It connects to your RV \_\_\_\_\_ to trickle charge.

This trickle charge doesn't provide any \_\_\_\_\_ charge, so don't count on it.

## Solar

Solar panels are just creating \_\_\_\_\_ power.

AC appliances you want to run are still limited by your \_\_\_\_\_ bank and \_\_\_\_\_ size.



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## | Solar (Continued)

Invest in a \_\_\_\_\_ charge controller. This will make sure you charge and float your batteries safely at the correct voltages and don't overcharge them.

A single 100-watt panel can put out up to \_\_\_\_\_ amps per hour at its peak.

\_\_\_\_\_ and \_\_\_\_\_ will affect the output of your panels.

Can I run my air conditioner with solar? \_\_\_\_\_

Technically, you can build a power system in your RV that can run your A/C. Let's say you have a small 13,500 BTU RV air conditioner. Here's how much power it needs:

- On startup, it uses up to 3,000 watts
- It continuously uses 1,500 watts
- This translates to about 150 amps per hour from your batteries

To run A/C on solar, you'd need:

- \_\_\_\_\_ watts of solar panels
- \_\_\_\_\_ amp hours of lithium batteries
- A \_\_\_\_\_ watt inverter or larger
- All new larger gauge trunk \_\_\_\_\_ to handle the voltage increase
- Not to mention all the other parts of the system, like a \_\_\_\_\_, solar charge controller(s), and more

The easiest way to add solar is to get a \_\_\_\_\_ panel or solar \_\_\_\_\_.

The best long term solution is to \_\_\_\_\_ as many panels as you can on the \_\_\_\_\_.

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## | Propane

Propane gives you the option of making food and staying warm while using virtually \_\_\_\_\_ power.

You can find propane easily at many \_\_\_\_\_.