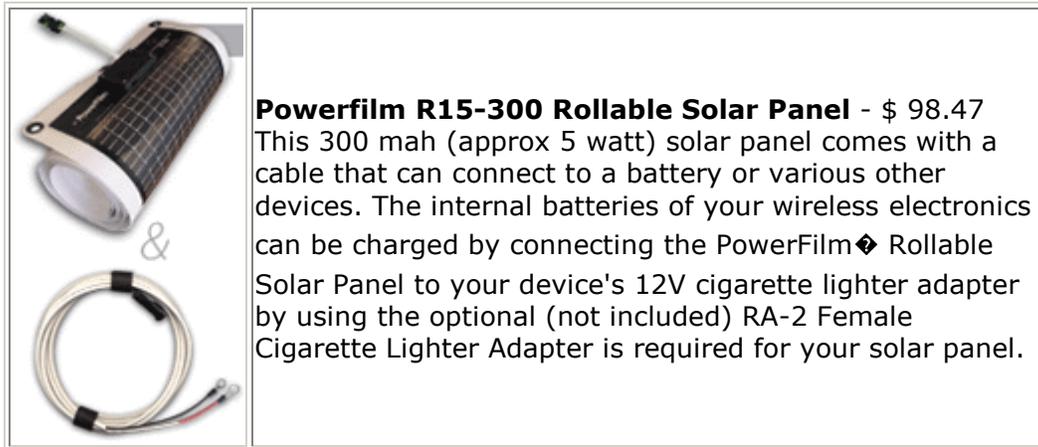


How to Make a Solar Power Generator

You can make a small solar power generator for \$250 to \$300. These are great for power failures and life outside the power grid. Power your computer, modem, vcr, tv, cameras, lights, or DC appliances anywhere you go. Use in cabins, boats, tents, archaeological digs, or while traveling throughout the third world. Have one in the office store room in case of power failures in your high-rise.

1. Buy yourself a small solar panel. For about \$100 you should be able to get one rated at 12 volts or better (look for 16 volts) at an RV or marine supplies store.



2. Buy yourself a battery. Get any size deep cycle 12 volt lead/acid or gel battery. You need the deep cycle battery for continuous use. The kind in your car is a cranking battery-just for starting an engine. Look for bargains, the cheapest ones should cost about \$50-60.

3. Get a battery box to put it in for \$10. (This is good for covering up the exposed terminals in case there are children about If you going to install the system in a pump shed, cabin, or boat, skip this.)

3. Buy a 12 volt DC meter. Radio Shack has them for about \$25.

4. Buy a DC input. I like the triple inlet model which you can find at a car parts store in the cigarette lighter parts section for about \$10. This is enough to power DC appliances, and there are many commercially available, like fans, one-pint water boilers, lights, hair dryers, baby bottle warmers, and vacuum cleaners. Many cassette players, answering machines, and other electrical appliances are DC already and with the right cable will run straight off the box.

5. If you want to run AC appliances, you will have to invest in an inverter. This will convert the stored DC power in the battery into AC power for most of your household appliances. I bought a 115 volt 140 watt inverter made by Power-to-Go at Pep Boys for \$50. Count up the number of watts you'll be using (e.g., a small color television(=60 watts) with a VCR(=22 watts), you'll need 82 watts).

6. Use a drill to attach the meter and DC input to the top of the box.

7. Use insulated wire to attach the meter to the wingnut terminals on the battery. Connect the negative (-) pole first. Only handle one wire at a time. Connect the DC inlet to the battery in the same way. Connect the solar panel to the battery in the same way.

8. Close the lid (I use a bungee cord to keep it tight). Put the solar panel in the sun. It takes 5-8 hours to charge a dead battery; 1-3 hours to top off a weak one. It will run radios, fans, and small wattage lights all night, or give you about 5 hours of continuous use at 115 volt AC, or about 1 hour boiling water. This system may be added on to with larger panels, inverters, and batteries.

Options: A pop-up circuit breaker may be added between the positive terminal and the volt meter. Some of you will want an amp meter as well. The panels I recommend have built-in bypass diodes, but I recommend charge controllers for people who have panels without diodes. Another option is a voltage regulator, which is not necessary for a system this small, but a larger system would require one.