



# 10 Common Questions About Solar Energy

- 1) How many different kinds of solar panels are there?

There are two basic categories of solar panels. One is the solar electric, which produces electricity. There are also solar thermal panels, which either produce hot air or hot water. All three panels, however, are distinctly different and are manufactured by multiple manufacturers.

- 2) Through the use of alternative energy, can I really make my cabin independent of the local utility company?

The amount of power that your alternative energy system collects and stores is dependent on your location and how much equipment you install to gather and store that energy. The independence you achieve depends on careful selection of the appliances, lighting, and other energy-using devices, as you plan to maximize your energy efficiency.

- 3) What is a typical independent alternative energy-power set-up?

A typical installation would probably include solar panels installed in groups of 1-12 modules on a solar mount. Roof-top mounting is generally not as efficient as mounting on a pole or pedestal. Second, your system would probably include a controller to prevent your batteries from overcharging. It would receive the power from your solar or wind generators and control the flow of that power to the battery. Third, batteries receive and store the DC electrical energy. Next, an inverter converts DC power stored in the batteries to 120 volt AC, standard household power. Then, an engine generator is commonly used to produce 120 volt AC power as a second source and back-up for the charging of batteries when there is a shortfall in solar or wind power, or when there is a temporary need for additional power. Your installation may include a small area or a building dedicated to function as a power center, which could include most of the above described equipment aside from the solar panels or wind generator itself.

- 4) What is the difference between off-grid and on-grid installations?

Off-grid installation simply means that it is most likely a more remote location and one for which the installation is not connected to the local utility electric power provider. Off-grid installations often include a back-up engine generator. On-grid would be an installation for which there is a direct connection to the local power utility. When a surplus of electrical power is produced by the alternative energy system, it would spin the utility meter backwards, putting electrical power into the utility grid system, for which the owner would gain a credit. In this type of installation, there would be less need or justification for a backup engine generator, since the power utility company itself will generally provide that backup.

- 5) If I have a remote cabin or home site, why should I consider solar power (photovoltaic [PV] electricity)?

PV electricity will generally cost much more per kilowatt than the same amount of power from a power utility company. However, utility power line extensions to your remote site can be extremely costly also. It should be a goal of every efficient installation to reduce the demand for power by smart purchasing of energy-efficient appliances and controls. Another good reason to purchase a PV system is simply because it is modular and expandable. You can begin with a smaller system and add to it as your cash flow permits, thus expanding your power base over time. A PV system is generally preferable to a wind generator mainly because there is less maintenance and more energy. Sunshine is more dependable than wind in most locations.

6) What makes solar so great?

The sun is dependable. What we use of the sun's energy today will in no way diminish its ability to produce energy for our use tomorrow, and it does not pollute. There are no hidden costs and no contaminants left behind for our children to clean up later.

7) Concerning payback and maintenance, what can I expect with solar power?

PV cells have a payback that varies from 2 years to perhaps 8 years, depending on the type of panel or module, the installation method, and climatic conditions. That's a very broad-based answer, but in a remote location, the payback could be very fast when compared to the up-front line extension costs from a utility company. PV modules do, in fact, pay back their debt many times over in the course of their expected longevity. Maintenance is easy since there are no moving parts – they are practically maintenance free! Basically, it is simply a matter of keeping them clean, and, in most climates, the occasional rain storm takes care of that issue as well.

8) What is a phantom load?

A phantom load simply refers to the fact that many modern appliances are still calling for electricity even though they appear to be turned off. Anything with a clock, which would include microwave ovens, perhaps coffee makers, VCRs – these kinds of appliances may use a small amount of power at all times. Wiring these kinds of appliances to a wall switch is one way of indeed turning them off. Eliminating phantom loads in your solar cabin or home is just smart energy usage.

9) How does energy conservation relate to alternative energy?

When you plan to construct or retrofit your dwelling to solar or other alternative energy, it is just as important to consider that since Americans spend 80% of their time inside, any improvement that you can bring to energy efficiency through better design, better planning of appliance type and usage will not only save money, but it does, in fact, help clean up the environment. No kidding, without using exotic construction designs or highly unusual appliances, there are common sense ways to easily reduce energy consumption by up to 50% without altering one's lifestyle.

10) Are there any tax credits or incentives relating to alternative energy?

Yes, there are many federal and state incentives and even regional utility company perks available. At CMC Sun Energy we have a resource list for you.

Alternative Renewable Energy Options

**SUN ENERGY**

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