

# Norwich Energy Committee

# Solarize Basics

**watt (W):** a unit of power, used to describe the capacity of a solar panel to generate electricity

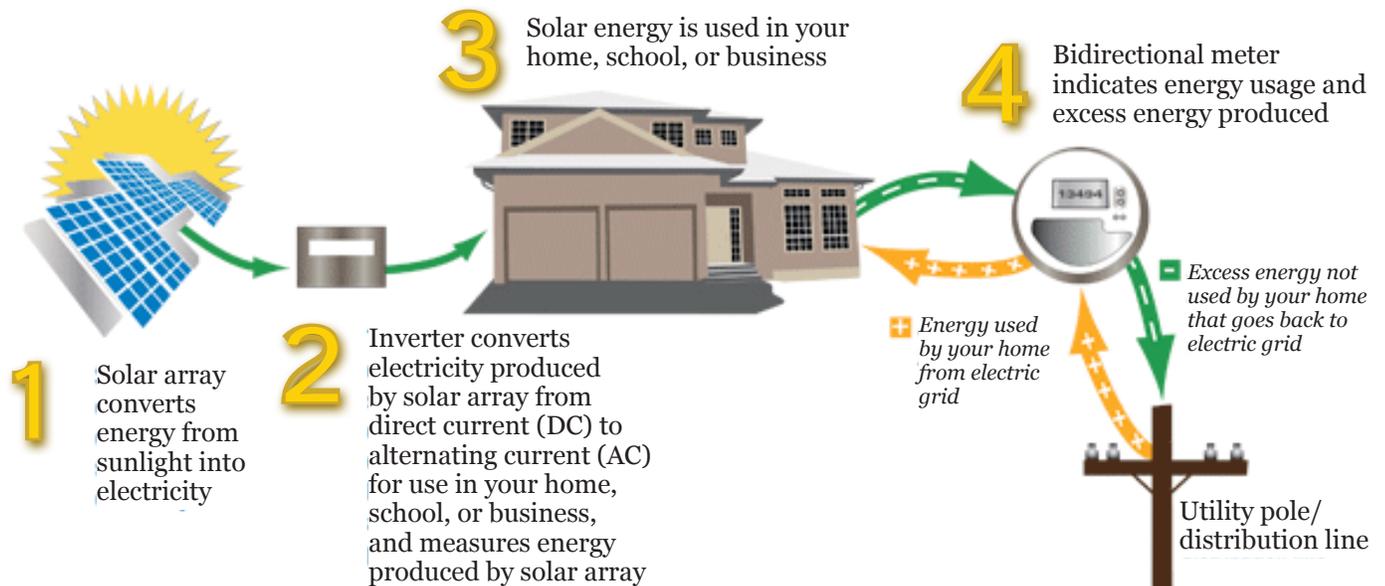
**kilowatt (kW):** 1,000 watts

**watt-hour (Wh):** a unit of energy, equal to the work done by one watt acting for one hour

**kilowatt-hour (kWh):** 1,000 watt-hours



## How Does Net Metering Work?



Net metering allows customers to generate and use power at the same time. If a net-metered customer uses more electricity than they generate, their bill for the month will consist solely of the difference. If a net-metered customer generates more electricity than they use, their bill for the month will be covered, and a credit for the excess will be put toward their bill for the *next* month. Net-metered customers using solar energy receive an additional credit—a “solar adder”—that is usually about \$0.06 per kWh. However, net metering credit *doesn't* roll over year to year, and net-metered customers do have to pay customer service charges and other monthly fees.

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## How Much Electricity Would I Make?

It's easy to estimate how much electricity you're probably going to generate with a solar electric system at our latitude.

For a **fixed-mount solar system** that is reasonably well-oriented toward the south, positioned in a sunny area, and well-angled:

**1 w installed = 1.25 kWh per year**

So a 4-kW fixed-mount system will probably generate around 5,000 kWh per year.

A **tracking solar system** will generate more electricity than a fixed-mount system, because the tracker keeps the panels constantly oriented at the best possible angle. According to Solaflect, for a well-placed tracking solar system:

**1 w installed = 1.57 kWh per year**

So a 4-kW tracking system will probably generate around 6,280 kWh per year.

A solar installer will analyze your property before installation, and can give you an accurate and specific estimate of likely production that's based directly on the setup of your yard, your house, and the immediate geography.

In 2012, the average residential account in Vermont used 6,780 kWh of electricity. You can get a good idea of your own usage by tallying up your electric bills over the course of a year. It's also worthwhile to think about how you might be able to reduce your use of electricity—the less you need, the smaller (and more affordable) your solar system can be. Replacing an old refrigerator or freezer can instantly chop as much as 1,000 kWh off your annual bill; replacing 12 incandescent bulbs with compact fluorescents can reduce it by another 1,000 kWh.

But if you also have plans to replace an oil or propane heater/furnace with an electric option (heat-pump water heater, minisplit heat pump, etc.), or a gas-powered car with an electric vehicle, you may want to consider getting a solar array large enough to cover these kinds of additional electrical needs.