

## Frequently Asked Questions

SOLAR POWER IS GOOD FOR THE PLANET

### Q: Does solar work in Oregon?

A: Yes. Northwest Oregon receives more sun than Germany, which is leading the world in its use of solar energy. There is a 1.1 kW solar electric system in operation at St. Helens High School. To see how it is performing, visit [www.b-e-f.org/renewables/sthelens.shtm](http://www.b-e-f.org/renewables/sthelens.shtm).



### Q: What's a solar energy system?

A: There are two kinds of solar energy systems you can add to your home or business: solar electric and solar water heating.

A solar electric system makes electricity, which can be used by any electrical device in your house and saves you money by reducing the number of kilowatt-hours (kWh) on your monthly bill.

A solar water heating system preheats the water that goes into your existing water heater. This saves you money by reducing the amount of gas or electricity your water heater consumes.

### Q: How much does a solar electric or hot water system cost?

A: Prices for solar electric systems vary depending on the size of the system. The average residential system costs from \$6,500 - \$10,000 for each kilowatt (kW), not including incentives. Incentives, including tax credits, typically cover more than half the cost.

A typical solar water heating system costs \$6,500-\$10,000, before incentives. Incentives typically cover half the cost.

### Q: What size system do I need for my house?

A: Electricity production is directly proportional to system size for solar electric systems. 1 kW of solar electric panels optimally oriented with minimum shade will produce approximately 1,000 kWh per year in Portland. Thus, a typical residential system of 3 kW will supply about 3,000 kWh annually, or ¼ of an average home's yearly electric usage (an average four-member household uses 12,000 kWh/year).

Hot water is one of the largest uses of energy in your home. Residential solar water heating systems can save 2,000-2,800 kWh (100-140 therms of gas) per year. That's 60% of the energy used to heat water in the average Oregon home. In the summer, your system may provide 100% of your hot water. During the winter months, solar will still heat your water, but not all the way to 120 degrees.

### Q: Is my location good for solar?

A: Solar works best on south facing roofs, though east or west oriented low-slope roofs may be suitable as well. There should be no or little shading from trees, buildings, chimneys or roof gables. Remember, locations with no shading in winter may be shaded by spring and summer foliage, and little trees will grow!

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## Q: What is added to my house or building if I install solar?

A: Both solar water heating and solar electric systems utilize large panels that will most likely be mounted on your roof.

Photovoltaic systems require 100 square feet of space for each kW installed. Photovoltaic systems have wall-mounted inverters, about the size of a large briefcase, and two smaller disconnect switches. These can be located indoors near the breaker panel, or outdoors in shaded location. A meter that measures the electricity generated by the system will also be installed near the inverter.

Solar water heating panels, called collectors, are 4' x 10'. A typical system will have one or two panels. An additional 80-gallon storage tank is installed near the existing water heater. Solar water heating systems can also be used in conjunction with tankless water heaters, also called on-demand water heaters.



## Q: Can I install the system myself?

A: The PUD does not provide incentives for self-installed systems. You must use an eligible contractor.

## Q: What's the payback for a solar system?

A: Your solar investment should add value to your home, which you will recover when you sell the home. The Appraisal Journal has estimated this added value to be 20 times the annual energy cost savings. With that assumption, a solar water heater typically adds more value to your home than your final out-of-pocket cost! In addition to that home equity, you will enjoy reduced energy costs each month. For solar electric systems, the added home value may be half of your out-of-pocket cost. The remaining cost would be recovered from electricity generation.

## Q: What are the benefits of investing in solar energy?

Producing your own electricity protects you from future increases in fuel and electricity prices. Solar equipment is exempt from property taxation, so installing solar increases the value of your home without increasing your property taxes.

In addition, there are many non-economic reasons for making the installation of a solar system a priority. The environmental benefits of renewable energy are immediate and long-term. A solar energy system contributes to cleaner water and fresher air, and to sustainable use of our natural resources for future generations.

## Websites for more information:

<http://www.oregon.gov/ENERGY/RENEW/Solar/index.shtml>

<http://www1.eere.energy.gov/solar/>