

# Basic Solar Information



## Three Basic Types of Solar Energy Systems

1. Passive solar space heating and daylighting use building architecture, properly chosen and placed windows, and thermal storage (e.g., flooring materials that absorb and store radiant heat).
2. Solar domestic water heating systems preheat water so that less electricity or gas heat is needed.
3. Solar electric power systems, also called photovoltaic (PV) systems, generate electricity. If a utility customer's PV system produces more power than the customer uses, "net metering" laws require that the customer receive credit at full retail value for the surplus electricity that flows back to the power grid.

## Solar Energy Systems Work Well in Western Oregon

Western Oregon receives as much solar energy as the national average. Solar water heating and solar electric systems in Oregon produce roughly the same energy on an ANNUAL basis as systems in Florida. It is actually easier to build a home that produces as much energy as it consumes annually (a "zero net energy home") in Western Oregon than in hot sunny places or cold sunny places.

## Cost Comparison

The following table provides approximate values for systems of comparable energy savings (2,500-3,500 kWh per year).

System Type	System Cost <sup>1</sup>	System Life	Energy Cost <sup>2</sup>	Maintenance <sup>3</sup>
Passive Solar & Daylighting	\$0 - \$3,000 (new home)	50+ years	less	none
Solar Water Heating	\$2,500 - \$4,000	20+ years	same	3-4 year check-up
Solar Electric (PV)	\$6,000 - \$15,000	30+ years	slightly more	none
Efficient Appliances	\$1,000 - 2,500	10+ years	less	minimal
Efficient Heating System	\$4,000 - \$9,000	30+ years	less	1-2 year check-up

## Solar Incentives to Reduce System Costs for 2008 (subject to change)

Federal Incentives	Resident: 30% tax credit up to \$2,000 (through 2008) Business: 30% tax credit + accelerated depreciation (through 2008)
State Tax Credits	Resident: PV \$3/Watt up to \$6,000, Solar Water Heating up to \$1,500, and Passive Solar up to \$1,500 Business: 50% up to maximum allowable cost
Energy Trust <sup>4</sup>	Resident: PV \$2/Watt up to \$10,000 and Solar Water Heating up to ~\$800. Check most current info at <a href="http://www.energytrust.org">www.energytrust.org</a> . Business: PV \$1.00 to \$1.50/Watt up to \$125,000 depending on system size and your utility. Check Web site at <a href="http://www.energytrust.org">www.energytrust.org</a> .
Local Utility	Varies; check directly with utility

## Top 5 Reasons Cited for Investing in a Solar Energy System

1. Personal preference and pride in owning a renewable energy generation system
2. Fixed future energy costs
3. Return of investment from reduced energy bills
4. Environmental stewardship
5. Supporting local economy and/or patriotism

Check these Web sites for current information:

Oregon Department of Energy  
[www.oregon.gov/energy](http://www.oregon.gov/energy)

Energy Trust of Oregon  
[www.energytrust.org](http://www.energytrust.org)

<sup>1</sup> Typical cost (after incentives) for system(s) in Western Oregon necessary to reduce annual utility energy consumption by 2,500-3,500 kWh

<sup>2</sup> Energy cost is a rough comparison of spreading the system post incentive costs over the life of the system compared to current utility costs.

<sup>3</sup> Checkup must be done by a professional to ensure optimal life and performance.

<sup>4</sup> Energy Trust of Oregon (ETO) electric incentives are available for customers of PGE and PacifiCorp. See [www.energytrust.org](http://www.energytrust.org) for natural gas incentives. Rev. 3-21-08 ODOE CF-136