E³A: Solar Hot Water Applications for the Home, Farm or Ranch

Steps in the Solar Hot Water Series

Conservation and efficiency

Water and energy conservation and efficiency provide the foundation for smaller, more efficient and more affordable solar hot water systems.

A solar hot water system's size is based on water and energy use. The less you use, the smaller, more efficient and cost-effective the system will be.

Initial purchase, operation and maintenance costs will be lower for a smaller system. Reduce your utility bills and be less reliant on a backup system typically powered by natural gas, electricity or propane.

Buildings using water-efficient fixtures, appliances and machinery can reduce water use up to 30 percent. Households without wells spend as much as $500 per year on water and sewer bills. Simple changes for using water more efficiently can reduce utility bills by about $170 per year.

Using water more efficiently reduces reliance on municipal water supply infrastructure and wastewater treatment facilities, and using well water reduces the amount of water drawn from aquifers.

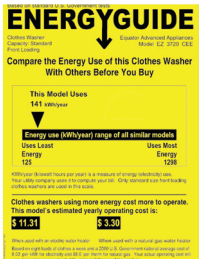
Water conservation and efficiency tips

Solar hot water systems provide water for showers and baths, kitchen and bathroom faucets, clothes washers and dishwashers. Heated water is also used in agriculture buildings for a variety of purposes.

If your home or building was built before 1992, consider installing WaterSense-labeled low-flow showerheads, faucet aerators and toilets. These showerheads — which use less than 2 gallons per minute versus more than 2.5 gallons per minute with a standard showerhead — could reduce water use by 2,300 gallons. WaterSense faucets typically reduce water use by 30 percent, but also fix water leaks because they can account for up to 15 percent of your water bill.

WaterSense-labeled products must undergo independent, third-party testing and certification to ensure they meet the U.S. Environmental Protection Agency's (EPA) criteria for both efficiency and performance.

When purchasing appliances and machinery, look for the Energy Star label. An Energy Star-rated high-efficiency clothes washer often uses half as much water and energy as a traditional clothes washer. Many high-efficiency clothes washers clean clothes effectively using cold water. For dishwashers, look for the Energy Star label and yellow EnergyGuide labels to compare energy use.



Insulate hot water storage tanks and pipes, especially if located in an unheated space. Insulation is cheap, easy and quickly pays for itself. Standby losses, or heat loss through the tank and pipes, can account for 20 percent of your water-heating bill.

Did you know?

Some amount of energy is required to heat water, but treating to drinking water standards and pumping water requires a much larger amount of energy. It also takes a lot of energy to treat wastewater before it can be circulated back into the water table. According to the EPA, American public water supply and treatment facilities consume about 56 billion kilowatt-hours per year, which is enough electricity to power more than 5 million homes for an entire year.

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