



# AESOP Energy Options

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While most people are captivated by the high-tech nature of solar-electric (photovoltaic; PV) systems, in most cases, a solar hot water system will harvest more energy at a substantially lower cost. In fact, compared to PVs, solar hot water (SHW) collectors are more than three times as efficient at producing energy from the sun.

Investing in an SHW system is a smart solar solution for most homeowners. This proven and reliable technology offers long-term performance with low maintenance. And with federal, state, and utility incentives available, these systems offer a quick payback—in some cases, only three years.

A thoughtfully designed SHW system could provide all, or at least a significant amount, of your household hot water needs for some portion of the year. The California Energy Commission estimates that installing an SHW system in a typical household using electric water heating can shave 60 to 70 percent off water heating costs. To get the most for your money, you'll want a properly sized system that offers the best performance in your climate.

## Pressurized Glycol Systems

In this active, closed-loop system, incoming potable water is routed to the solar storage tank, but never into the collectors. A water and antifreeze mixture circulates from the collectors through a coil of pipe in the solar tank, or through an external heat exchanger, and then is pumped back through the collectors. (In most climates, a 50/50 propylene glycol and water mixture will keep collectors from freezing.) The potable water is warmed by heat transfer through contact with the pipe or heat exchanger.

These systems require an expansion tank and a few other auxiliary components for filling, venting, and maintaining the system. A definite advantage to antifreeze systems is that the collectors can be mounted anywhere. These systems are pretty much the only choice in very cold climates.

The following illustration includes the primary components of any pressurized glycol system.

