

SAVE ELECTRICITY USING A SOLAR WATER HEATER

How much money do you spend each year on heating water for your home? If you want a break on the amount of money you pay for gas or electricity for heating water, try installing a solar water heater. This may reduce your cost of heating water by fifty percent or more.

You will notice that solar heating systems come in two different general types. The one which works best for you will depend on your geographic location. In warm locations, a passive solar tank, a black plastic tank which is installed on the roof and allows water to be warmed in the sun may be all that is necessary. In other areas, an active system will work best. The active system has solar collection panels installed on the roof that either allow the water to pass through for heating or use a heat exchange solution for heating the water in the storage tank.

The tank of the passive solar water heater is painted black in order to absorb the most heat from the sun. The water is kept at a constant level by a float mechanism that is attached to the cold water supply of the home. Water that has been heated in the tank is fed into the hot water supply of the home by gravity. As water flows from the tank it is replenished from the cold water.

Since the solar heating tank can be very heavy when filled with water, the roof may need to be strengthened to support its weight. Solar collector panels however are light

and will not require any additional support.

Passive heating tanks are only appropriate for homes in warmer climates.

One way to install an active system that is very simple, is as a pre-heater for water that is then fed into the normal water heater. In some climates, this can provide significant savings as water that comes into the tank is already warmed. The water is then brought to temperature using the normal source of heat for the water. In other systems, a pump is used to circulate the water from the storage tank through the solar system for heating. If the solar collectors are not able to keep the water warm enough, the secondary system will bring it to the correct temperature.

Active systems require that the collector panels be faced in such a direction that they get the largest amount of heat gain. Ideally, they are placed on a flat roof, however if the roof is sloped, they should be on the southerly facing roof.

Any time there is danger of freezing temperatures, there are special instructions for your solar water heating system. Be sure that you follow these instructions in order to avoid the possibility of freeze damage to the system.

If you live in a climate where the chance of freezing occurs many times during the winter, an active solar heating system that uses a heat transfer solution is a better choice. This system will use collector panels just like the other active systems; however

instead of water flowing through the tubes, an antifreeze solution is used. In the storage tank, there is a heat exchanger that allows the heat collected in the solar collectors to heat the water. The cooled heat transfer solution is then returned to the collector to heat again.

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