Take Control & Save®

A Cooperative Effort for Energy Efficiency

www.TakeControlAndSave.coop

Reducing the costs of water heating

Water heating is the third largest energy expense in the home. Understanding the costs of water heating and what you can do to lower those costs is yet another way homeowners can **Take Control and Save**.

There are three costs associated with the energy used in storage-tank water heaters: **demand costs**—the initial costs of heating water; the costs associated with **standby losses** when a water heater loses heat through the tank shell; and the costs of **distribution losses** that occur when hot water loses heat while running through pipes.

Lowering the tank temperature and using water efficiently are the easiest ways to lower **demand costs**. There are good reasons for setting a water temperature lower than 120 degrees Fahrenheit:

1) The system loses heat faster at high temperatures.
2) A higher temperature increases the rate of corrosion on internal fittings and other surfaces.
3) Important safety note: Hot tap water is a scalding hazard, especially to children and seniors. Scalding occurs in two seconds at 150 degrees while it takes 10 minutes in water heated to 120 degrees.

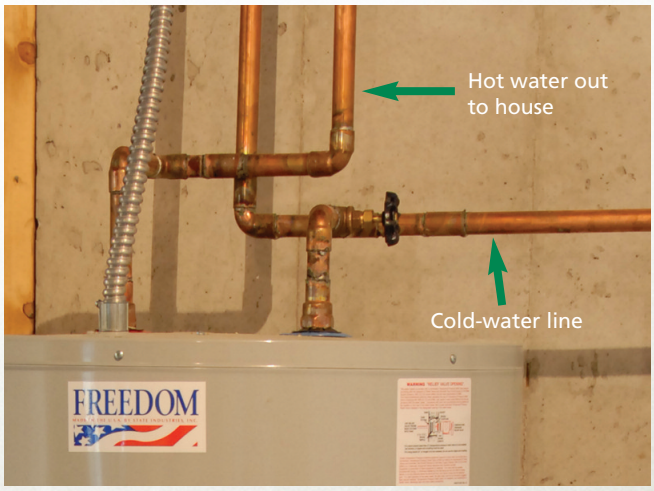
Usage is determined by how many live in your home. No two families' hot-water use is exactly alike; keep in mind your family's lifestyle and habits and try to use hot water as efficiently as possible.

Activity	Typical hot water usage
Clothes washer	25 to 40 gallons per load
Dishwasher	5 to 10 gallons per load
Tub bath	15 to 25 gallons
Shower bath	3 gallons per minute
Hand washing	1 to 2 gallons
Food preparation	3 to 6 gallons

Standby or **standing** loss refers to the heat lost from a hot-water storage tank through its shell. The water heater has to reheat the same water even when no water is being used. Households using less hot water have a higher percentage of standby losses, especially if the home's water heater is located in an unheated area.

Upgrading to a higher-efficiency water heater is the quickest and easiest way to reduce standby losses. More efficiency means a higher initial cost; however, you will continue to receive the energy savings over the lifetime of the unit.

Insulating your hot-water pipes will reduce **distribution losses** as the hot water flows to your faucet.



Add pipe insulation to as much of the hot-water lines as can be reached, along with about three feet of the cold-water line leading into the water heater.

Pipe insulation comes in different forms: closed-cell flexible foam tubes (R-3 to R-5); rigid foam (R-7); and fiberglass batts (R-2 to R-3). Use a good-quality plastic or rubber foam at least 3-4 inches thick. Do not cover unions or fittings at the ends of flexlines (these areas need to be clearly visible), and stay clear of the draft diverter on gas heaters.

Insulating older water heaters

An older water heater installed in an unheated area may need some extra insulation to reduce the amount of standby loss. Lightly place your hand against the side of the water heater; if it's warm, you may want to add insulation by purchasing and installing a **water-heater blanket**.

Insulation blankets with an insulation value of at least R-11 can be found in hardware and home stores at a minimal cost. Make sure you buy an insulation blanket designed for your type of water-heating system (insulation blankets are NOT recommended on oil-fired water heaters.)

Extreme care must be taken to ensure water-heater blankets are installed correctly.* Blankets come with many problems, including restricted access to the water heater and the potential for hiding leaks, accelerating rust damage, restricting combustion air, causing electric components to overheat, and obstructing venting.

If safety stickers are hidden under a blanket, the homeowner may be liable if someone is burned or scalded. Thoroughly read the instructions supplied with the blanket/wrap before installing the product.

Make sure all fittings are dry and in good shape before installing the wrap. Put a Gas Appliance Manufacturers Association safety sticker (available from GAMA or a plumber) on the blanket.

Leave the anode, relief valve, and controls exposed for routine maintenance. With gas heaters, take special precautions not to block the air intake opening and to keep the insulation from touching the flue. This is essential for the heater to function properly and to avoid a fire hazard.

Adding a blanket to water heater models purchased within the last five years is not recommended. Installing an insulating blanket does not void the water heater tank warranty; however, homeowners should check installation and safety recommendations in the manual that came with the unit. Other warranty and installation information is available from these manufacturers:

American Water Heater Co.
www.americanwaterheater.com • 800-999-9515

A.O. Smith
www.hotwater.com • 800-527-1953

Bock
www.bockwaterheaters.com • 888-784-8322

Bradford White
www.bradfordwhite.com • 800-334-3393

General Electric
www.geappliances.com/products/water • 800-626-2005

Kenmore
www.kenmore.com • 888-536-6673

Marathon
www.marathonheaters.com • 800-321-6718

Reliance
www.reliancewaterheaters.com • 800-365-4054

Rheem
www.rheem.com • 800-432-8373

Richmond
www.richmondwaterheaters.com • 334-260-1400

Ruud
http://waterheating.ruud.com • 800-621-5622

State Industries
www.statewaterheaters.com • 800-365-8170

Vaughn
www.vaughncorp.com • 800-282-8446

*AECI and its member cooperatives make no claims to the recommendation and safety of water-heater blanket installations. Consumers should thoroughly read blanket manufacturers' instructions and recommendations of the use of this product.

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