

Energy Tax Credits Fact Sheet – Domestic Hot Water Heaters

According to a study commissioned by the Northwest Energy Efficiency Alliance, two-thirds of hot water heater replacements occur only upon failure of the existing unit. The average annual Montana residence water heating bill is \$261 (using natural gas). Consequently, consumers have little time to research the technologies available for energy efficient replacement units. The state of Montana tax credit has been developed to encourage homeowners to replace inefficient water heaters before an emergency arises.

The state of Montana remains a credit of 25 percent of the investment, up to \$500 per taxpayer. Costs associated with the installation of a hot water appliance are considered part of the investment along with pipe insulation and hot water flow limitation devices.

Hot Water Heaters: Tank

Montana state government recognizes three categories of non-solar domestic hot water heaters for tax credit purposes. The first is the traditional tank-style heating unit fueled by natural gas, propane, or oil. There are no federal or state credits available for conventional electric tank- storage water heaters and Energy Star does not certify electric tank models.

For a natural gas or propane unit to qualify for the state credit, it must exhibit 90 percent thermal energy efficiency or higher or be labeled with an Energy Factor of at least 0.82. The latter standard measures performance of the appliance over time and is particularly difficult for manufacturers to meet.

Energy Star certification is not a reasonable guide for residential-size tank hot water heaters to claim the state credit; always check that the product meets the minimal numbers. Economy of scale allows larger, commercial-sized tank heaters to more easily meet thermal efficiency standards. But some tank heaters in the 30-gallon to 60-gallon capacity range meet the 90 percent efficiency standard, even though they may be marketed as “commercial” models.

Domestic Hot Water Heaters: Tank-less

Tank-less water heaters are the second main category and may also be known as instantaneous or on-demand heaters. These units offer energy efficiency by heating water only as it is being used — there is no storage capability. A sensor in the unit reads a drop in water pressure as a hot water faucet is turned on. The burners come on and water is heated as it flows. The sensor turns off the burners when the hot water spigot is closed. Models are available that use electricity, natural gas, or propane. “Whole-house” units are available as well as units that serve a limited number of faucets. Moreover, Energy Star does not certify electric tank-less water heaters.

Because of the potential problem of mineral build up in these units, it is recommended household water be analyzed before installation. A water conditioning or flushing system may be recommended.

Heat Pump and Gas Condensing Water Heaters

These units use vapor compression of a refrigerant to move the heat in ambient air to heat water in a storage tank. The condenser coil for the heated refrigerant is in the hot water storage tank. As with other forms of heat pumps, the technology is efficient because heat is “moved” from one form — ambient air — to another — water. The operating cost is for electricity to run fans and pumps.

Another technology waiting in the wings is the gas condensing hot water heater. Gas condensing boilers have been in recent use for space heating, but residential hot water heaters are only now becoming available. These systems use post-combustion gas vapors to further heat the water.

Resources

The Database for State Incentives for Renewables and Incentives (DSIRE) offers good descriptions of state and federal incentives at its national website: www.dsireusa.org. The site also offers links for additional information about state and federal conservation tax credits.

The state form ENRG-C is used for energy conservation work. The forms include questions and answers on the back. The Montana Department of Revenue offers a website on state and federal energy tax credits at: <http://revenue.mt.gov/>