

Energy Tax Credits

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 \$250 (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 safe installation of a hot water appliance are considered part of the investment for both state and federal returns and Montanans can also claim tank and 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. See the Resource section for more information on hot water heater criteria.

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 either 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: Tankless

Tankless 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 tankless 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.

Heat pump water heaters accounted for less than 43,000 residential sales in 2013 — nationally. Nonetheless, according to the Environmental Protection Agency (EPA), if just 10 percent of the nation’s 4.8 million electric water heater sales were current heat pump technology, the aggregate energy savings could amount to nearly 1.3 billion kilowatt-hours per year. Consequently, the federal government and Energy Star wish to encourage market share for the technology. An electric heat pump water heater should be certified as having an Energy Factor equal to or greater than 2.0 to claim the credit. The maximum amount against the entire investment is \$300, or \$500 maximum if combined when other energy conservation investments are claimed.

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 Tax Incentive Assistance Project (TIAP) is a coalition of public interest nonprofit groups, government agencies, and other organizations in the energy efficiency field. Its website is designed to give consumers and businesses the information needed to make use of the federal income tax incentives for energy efficient products and technologies. The TIAP website can be accessed at: <http://energytaxincentives.org/>

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/home.aspx>