Heat Pump Water Heater

A heat pump water heater uses common refrigeration technology to make your water heater two to three times more energy efficient. A heat pump water heater can be purchased as a stand-alone unit, or a conventional storage water heater tank can be retrofitted with a heat pump. Make sure to have your heat pump water heater properly installed and routinely maintained by a qualified professional to optimize its energy efficiency.

How does a heat pump water heater work?

A standard electric water heater uses electricity to directly generate heat. A heat pump water heater works differently – it uses electricity to move heat from the surrounding air into the enclosed water heater tank. It requires less energy to move heat than create heat.

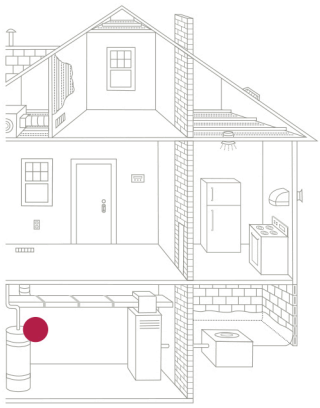
Where is the best place to install a heat pump water heater?

ENERGY STAR® recommends that you install a heat pump water heater in a space with a year-round ambient temperature above 40°F and a volume of at least 1,000 cubic feet. A heat pump water heater will cool the space in which it is located, and generally will not work as well in colder spaces. The ideal location for a heat pump water heater is in an area with excess heat, such as a laundry room, basement, utility room, or garage. Heat pump water heaters will also generate noise when operating, which is a factor that should be considered before installing a heat pump water heater in conditioned living space.

If you have a geothermal heat pump to heat and cool your home, a desuperheater can be added to the system to heat the water in your existing storage water heater tank.

How much money could I save?

A heat pump water heater will have a higher initial cost than a conventional storage water heater, but the lower operating costs will offset the higher purchase and installation price. Compared to a standard electric water heater, an ENERGY STAR qualified heat pump water heater could cut water heating costs in half, saving the average homeowner about $300 per year on energy bills. Large families that use more hot water will save even more money.



TVA INCENTIVES

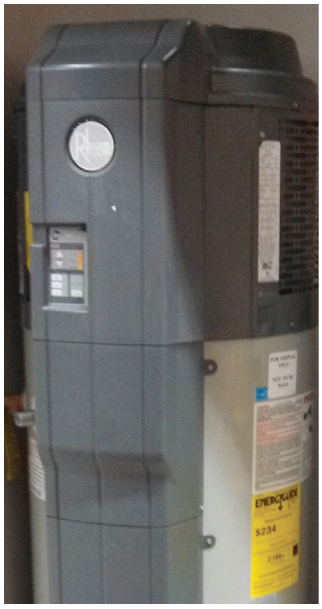
Subject to TVA Installation Requirements (see reverse side).

TVA offers incentives of 50 percent of the total installation cost up to $200/unit (no limit).

For more details, call 1-855-2eScore (1-855-237-2673) or go to www.2eScore.com

energyright® solutions TVA

TVA Installation Requirements for Heat Pump Water Heater*



A heat pump water heater must be installed correctly, per the following requirements, in order to be eligible for a TVA incentive:

- Water heater shall be installed per manufacturer's instructions and applicable codes; water quality shall be evaluated for debris that may clog the equipment; water leaks shall be repaired before installation.
- Interior of storage tank shall be non-corrosive; tank shall have a nominal size of 50 gallons or greater; system shall be installed to be freeze-resistant.
- Water heater shall be accessible for service; attic installations are not allowed.
- Water temperature shall be set to 120°F or as prescribed by local code.
- If leakage of tank may cause damage, a galvanized steel pan shall be installed.
- Pan shall be at least 1½" deep and drained or pumped to daylight with minimum ¾" pipe.
- Pan drain shall terminate between 6" and 24" above ground surface.
- Water heater shall have a separate or combined pressure-relief valve and temperature-relief valve.
- A shut-off valve shall not be installed between a relief valve and the termination point of its discharge pipe or between a relief valve and the tank.
- Discharge pipe shall terminate safely and at a safe location.
- Bottom fed tanks shall have a vacuum-relief valve.
- An expansion tank shall be securely installed as recommended by manufacturer or as required by local codes; no valves shall be located between the expansion tank and the storage tank.
- If an add-on heat pump is installed on an existing water heater, the existing tank shall be leak-free and fully operational; add-on heat pump shall meet ENERGY STAR requirements.
- If a recirculating pump is used, best practice is to install a timer set to operate only during intervals when hot water is normally used.
- Any penetrations to the exterior of the home created during installation shall be sealed.
- Quality Contractor Network (QCN) member shall advise participant to install a working carbon monoxide (CO) monitor if the home has an attached garage or any gas appliances.

* *This sheet is not a substitute for the TVA Standards.*

RECOMMENDED BEST PRACTICES

- **Non-municipal water (i.e., well water) may require treatment or conditioning.**
- **If system pressure is more than 75 psi, then a pressure regulator should be installed on the incoming water line.**
- **Noise and additional cool air generated by water heater may be a concern if located in a conditioned area such as a utility room; better locations are basements and garages.**
- **ENERGY STAR recommends that the space containing the heat pump water heater should have ambient temperature above 40ºF and a volume of at least 1,000 cubic feet.**
- **Recirculating pumps should be installed on a timer and set to operate only during intervals of time when hot water is normally used.**
- **Insulate hot water pipes and first six feet of cold water pipes at water heater.**