

Sustainability in Action – Water Heater Replacement

In December 2020 we replaced our water heater. Our house was built in 1999 and the water heater was original to the house. Needless to say, a lot has changed in 20 years in terms of energy efficiency with appliances. Typically, the water heater is the [second greatest source of energy consumption](#) in our homes (behind cooling and heating).

The old water heater consumed an average 5,000 kilowatt hours (kWh) annually. We pay about \$.12 per kWh of electricity so that means we were paying about \$600 per year to run our water heater.

Our new [Bradford White water heater](#) is an electric heat-pump hybrid. The [technology works like a refrigerator in reverse](#). It pulls hot air in (thereby heating the water some with ambient air) and pumps cold air out. So in the summer, our garage will be about 10 degrees cooler AND it only uses about 958 kWh per year. That means we will be spending about \$115 per year to run our new water heater.

We paid \$2,300 for the new unit and installation by our plumber. If we had replaced our old water heater with a typical 50-gallon conventional water heater it would cost about \$1,000 for the unit and installation. Additionally, there is a \$300 one-time Federal Tax Credit because it's an [Energy Star appliance](#). These credits are designed to encourage purchase of energy-efficient appliances that reduce the demand for electricity, reduce cost to run and reduce green-house gas emissions.

The electricity cost savings of about \$500 per year means that even though the new heat pump is \$1,000 more expensive up front than a conventional heat pump we estimate it will be recouped by year three. From then on it's just money in the bank. Plus far fewer electrons being used each year which means far fewer green-house gases being emitted.

Thanks!

--

Dory Larsen