

# Water Heater Standards Will Save Many Households \$170 Each Year and Slash Climate Pollution

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*The U.S. Department of Energy (DOE) recently finalized new standards for home water heaters that will shift sales away from outdated, inefficient technology that is costly to run.*

Water heaters are the second-largest energy user in most homes. Yet most new models—whether electric or gas—use older, inefficient technology, contributing to large energy bills and greenhouse gas emissions.

Long-overdue DOE standards finalized in April will shift the market to modern technology and significantly reduce both overall costs for households and greenhouse gas emissions. The standards—which take effect for new models in 2029—are largely based on recommendations by two of the largest water heater manufacturers and consumer, climate, and efficiency advocates.

The standards set separate minimum efficiency levels for different types of water heaters, including electric tank water heaters and gas-fired tank water heaters (which each make up nearly half of new sales). The agency said it is still considering comments regarding updating standards for gas-fired instantaneous (“tankless”) models.



## Shifting electric models to heat pumps

Most electric water heaters in the United States today use the same “electric resistance” technology that has been around for more than a century. Such models were widely commercialized beginning in the 1940s, but there’s one problem: they use a lot of electricity. In fact, they draw nearly a quarter of a household’s total electricity use, on average, according to federal data.

The new standards will shift more than half of new electric tank sales to a far more efficient technology: heat pump water heaters. These models use less than half as much energy to heat the same amount of water to a given temperature.

Heat pump water heaters are a proven technology. They have been used for decades and are the most popular type of electric water heater in Japan, and their sales are growing rapidly in parts of Europe. Each of the largest

**A typical household buying a new electric tank model will save nearly \$170 on utility bills every year compared to one using an electric model today. Taking into account additional upfront costs, households will save more than \$850 over the lifetime of the product thanks to the standards.**

manufacturers makes heat pump water heater models that meet the new standards, yet many contractors in the United States still don't offer this super-efficient technology to customers.

Compared to electric resistance models, heat pump water heaters (also known as “hybrid water heaters”) can deliver even more hot water over a short period of time. They generally include backup electric resistance elements to meet demand during periods of high use.

Heat pump water heater purchasers will see their investment pay off through dramatically reduced energy bills.

**By midcentury, the standards will be cutting carbon dioxide emissions by an amount equivalent to those from 25 gas-fired power plants.**

The energy savings from these standards will especially benefit low- and moderate-income households, who generally spend a disproportionate share of their income on energy bills. DOE estimates that low-income households on average will save nearly \$1,600 over the lifetime of a product meeting the new standards. The standards will also help renters—who are disproportionately low-income and usually do not buy water heaters—by ensuring landlords install efficient water heaters.

The new standards will maintain the existing efficiency levels for the smallest water heaters (35 gallons and below), including those designed for installation in small spaces, for which heat pump technology hasn't yet been introduced to the market.

## Cutting energy waste in gas-fired tank models

Most of today's gas-fired water heaters similarly do not use the most efficient technologies. The new standards will reduce the energy use of gas-fired tank models by about 9% relative to models just meeting the current standards, saving consumers \$16 annually. Manufacturers will be able to meet the new standards by reducing heat losses up the flue when the water heater isn't firing. (DOE analysis found this to be the highest efficiency level for this product category that would ensure users save money overall.)

## New standards long awaited

DOE hadn't updated residential water heater standards since 2010. By law, it was due to finalize new standards (or determine that an update was not appropriate) by 2018.

The new standards are based on [recommendations](#) submitted to DOE by a multi-stakeholder coalition of two of the largest water heater manufacturers (Bradford White and Rheem), energy efficiency organizations (American Council for an Energy-Efficient Economy, Appliance Standards Awareness Project, and Northwest Energy Efficiency Alliance), environmental advocates (Natural Resources Defense Council), and consumer advocates (Consumer Federation of America).

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