



# How to make your home more energy efficient — and

# How energy efficient get a tax break too

New home-efficiency subsidies, explained

By [Erica Werner](#)

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Ever wish you were a little kid again playing with your dollhouse? We can't make that fantasy come true, but if you're now an adult who wants to play a role in reducing greenhouse gas emissions, you'll find that it's getting cheaper and easier to upgrade your real house. And now, the federal government's likely to pick up some of the tab — kind of like your parents used to.

The [Inflation Reduction Act](#), or IRA, is the most ambitious legislation ever enacted in the United States to combat climate change. Starting this year, homeowners can get new tax credits and rebates for making their abodes better for the environment. The benefits apply to big changes like [installing solar panels](#), or smaller ones like swapping a gas stove for an induction range.

The benefits vary depending on your income, and additional benefits may be available where you live, so it's worth checking with a tax expert, a [consumer guide](#) or a credible source like the [Congressional Research Service](#) or the [Bipartisan Policy Center](#).

Here are some of the ways you can outfit your environmentally smart dream home — often with help from the IRA.

[\[How the Inflation Reduction Act might help you — and change the U.S.\]](#)

## Heat pump

Heat pumps are an energy-efficient alternative to furnaces, which are frequently powered by natural gas, a fossil fuel. [Heat pumps](#) can replace air conditioners and even hot water heaters. They work by pulling heat from outside and pumping it into the home to raise the internal temperature, reversing the process to provide air conditioning.

The new law includes a credit of as much as \$2,000 to help homeowners purchase heat pumps, which can cost anywhere from \$1,500 to more than \$10,000. Heat pumps also are included in a new rebate program included in the IRA to help low- and medium-income homeowners purchase certain electric appliances.

## Induction stove

Gas stoves have gotten a bad rap recently because, unlike other appliances that run on natural gas, these stovetops produce emissions right into people's living spaces. This can aggravate respiratory diseases in some people. An induction range uses an electric current and coiled copper wire to deliver more efficient cooking heat than either gas ranges or conventional electric stovetops.

Induction ranges can be pricey, though they're getting more affordable, with models starting around \$1,000. The IRA includes an \$840 rebate for people with qualifying household incomes to purchase an electric range. Induction ranges and traditional electric coil stoves would qualify. The rebates are available to people making up to 150 percent of the median income in their area.

## Electric vehicle

More people are turning to plug-in cars as the technology improves and the country takes steps to generate more of its electricity through renewable, clean sources. President Biden has [set a goal](#) for half of all car sales to be electric by 2030.

The IRA continues an existing \$7,500 tax credit for electric and hybrid plug-in passenger vehicles, but makes some significant changes. To qualify, vehicles would have to be assembled in North America, something that's not the case for many carmakers. The law also sets limits for consumers to be able to claim the credit, with an income ceiling of \$150,000 for individuals and \$300,000 for joint filers. The law also sets price limits for vehicles: Cars that cost more than \$55,000 and trucks and SUVs costing more than \$80,000 would not be eligible.

The credit is currently claimed on your federal tax return, but the law envisions that it could reduce vehicle prices at the point-of-sale beginning in 2024. There's a new credit for sales of used electric vehicles, and a credit for charging equipment is being restored and extended.

## Solar panels

Solar panels that convert the sun's energy into electricity can significantly reduce a home's energy bills and reliance on the energy grid. But they can be expensive to install, with costs ranging above \$20,000. A [Pew Research Center survey](#) conducted in January 2022 found that 8 percent of U.S. homeowners have solar panels, up from 6 percent in 2019.

The IRA increases the 26 percent tax credit for solar panels and installation to 30 percent for the next 10 years, after which it drops to 26 percent in 2033 and 22 percent in 2034 and then phases out completely unless Congress extends it. The [Energy Department says](#) the tax credit will cut the cost of installing rooftop solar by more than \$7,500 for an average system.

## Home battery

Solar panels collect and produce energy in daylight hours, but that's not always when the energy is needed most. A home battery storage unit paired with solar panels stores excess energy until it's needed; some states and utilities also allow households to sell energy back to the grid.

The IRA extends the solar panel credit to cover battery storage systems, which were not previously included.

## Radiant floor heat

Radiant floor heat relies on a system of tubing underneath or incorporated into the floor of a house, which heats up when hot water is forced through it. (There are also electric and hot-air-based systems, but the water-based hydronic systems are most cost-effective and popular, [according to the Energy Department](#).) These systems are more efficient than most baseboard or forced-air systems.

These systems can be expensive, costing as much as \$20 per square foot, and they are not singled out for subsidies in the IRA. However, homeowners eyeing a broader home-energy-efficiency retrofit might want to consider them. The IRA sets up a new \$4.3 billion program called HOMES (Home Owner Managing Energy Savings) for states to provide rebates — up to \$8,000 for low-to-moderate-income households; and \$4,000 for everyone else — based on measuring how much total energy savings have been achieved from a retrofit. (Low-to-moderate income is defined as up to 80 percent of an area's median income.)

## Electric water heater

Warming up water accounts for a quarter of the natural gas used in a home that uses the fossil fuel for heating, hot water and cooking, according to a [Stanford University study from 2020](#). The same study concluded that the 58 million U.S. water heaters that use natural gas leak around 91,000 tons of methane — a greenhouse gas more potent than carbon dioxide — per year.

Conventional water heaters can be run by natural gas or electricity, but the IRA aims to nudge consumers to purchase heat-pump water heaters, which pull heat from the surrounding atmosphere and use it to heat water in a tank. Since the device is not actually producing heat itself, it is more efficient than alternatives. The IRA offers up to \$1,750 in rebates to qualifying households toward the purchase of a heat-pump water heater.

## Windows and doors

Ever sit near a door or window on a cold day and shiver in that draft? Tons of heat can escape through drafty doors or single-pane windows. Upgrading to energy-efficient options can make a big difference in lowering energy bills and potentially reducing emissions from your heating source.

The IRA offers 30 percent tax credits — up to \$1,200 annually — for energy-efficiency home improvements, specifying \$600 for windows and \$500 for doors. It also pays up to \$150 for a home energy audit that can assess your home's energy use.

## Cool roofs

A “cool” roof that reflects sunlight rather than absorbing it can keep buildings cooler in summer, reducing the need for air conditioning. Some homeowners even install green roofs — a lawn or garden on top of the house.

Depending on the materials used, installing a cool roof is not necessarily any more expensive than a new roof made from traditional roofing materials. Here’s the rare instance, though, where the IRA removed rather than added a benefit. Still, cool roofs should be considered for anyone thinking about a whole-house energy-efficiency retrofit, which offers rebates based on total energy savings achieved.

## Washer and dryer

According to the Energy Department, the [average American family washes about 300 loads](#) of laundry per year. That's a lot of water and energy. Replacing an old washer and dryer with an Energy Star-certified model can reduce energy use by 20 percent per load, and water use by 30 percent per load, the Energy Department says. Heat-pump clothes dryers also are available. Most households let the "gray water" produced by their washing machines go to waste, but there are multiple uses for it, including garden irrigation — though it's not appropriate for all plants. Check out [these guidelines](#) from the University of California. Gray-water systems are not covered by the IRA but they help your water bill and your garden.

The IRA offers an \$840 rebate for an electric heat-pump clothes dryer. Upgrading to a more standard but Energy Star-certified washing machine and dryer doesn't get a direct benefit, but would pay off for anyone aiming for a whole-house energy-efficiency retrofit, or simply looking to lower their water and energy bills.

# Landscaping

Your outdoor space can also save water and energy. Shade trees can help keep your home cool. Drought-resistant plants in place of a lawn will keep down your water bill in arid or drought-prone climates.

The IRA doesn't offer benefits directly to taxpayers for their landscaping expenditures — unless you have an electric mower big enough to qualify for the electric vehicle tax credit. (That's not a joke. Large riding mowers like the kind used by landscaping companies may actually qualify.)

## Smart thermostat

Installing a smart thermostat that you can control from your phone is one of the quickest and cheapest ways to bring down energy usage and expenditures. These thermostats may cost \$100 to many times that on the front end, but by tracking your energy use — which typically nudges you to use less — and allowing you to switch the AC or heating on or off from anywhere, they typically pay for themselves.

Though it's smart to get a smart thermostat as part of an overall approach to home energy efficiency, it's not covered in the IRA.

## Whole-house fan

A whole-house fan that pulls cool air from outside and circulates it throughout your house can be a fantastic alternative to running your AC during summer months, especially in regions that are hot during the day but cool down at night. Run the fan at night, and you might not have to use your AC at all on many days. However, the fans are typically useful only one or two seasons out of the year.

Whole-house fans can cost between \$500 to \$2,000, but they can allow you to go without your AC for weeks at a time. Although they previously qualified for limited energy-efficiency credits, the IRA does not include them — but that doesn't mean you shouldn't consider installing one. It could bring down your energy bills and help achieve savings if you're considering a whole-home retrofit.

## Wind turbine

Solar panels are a more common energy collection device for individual homeowners, but if you live in a windy climate you might want to consider installing a small turbine on top of your house to capture wind power.

Design and cost varies from a couple hundred dollars to thousands, and the costlier models are able to capture more kilowatts of power. The IRA provides a 30 percent tax credit for home wind energy projects.

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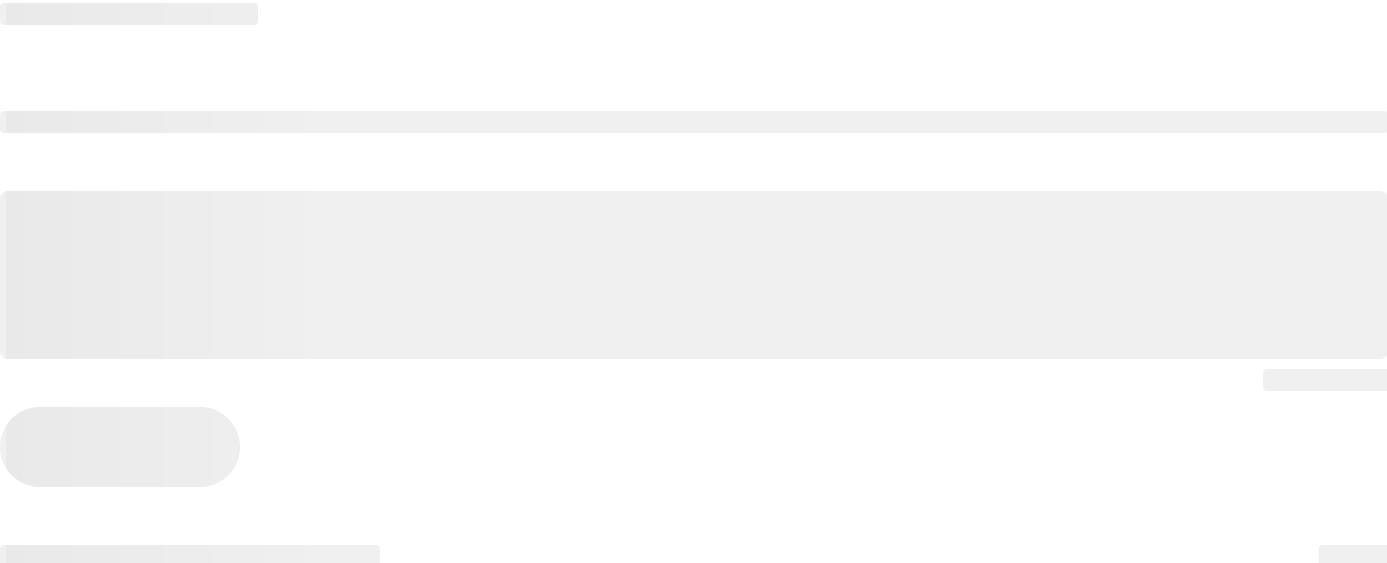
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