



Electrifying Your Home: The Basics

FACT SHEET

February 2025

Electrification means replacing your gas appliances with an electric-powered model. The following is a summary of your major options for replacing gas-powered appliances in your home.

Heat Pump

How does it work?

A traditional furnace heats a home by burning fossil fuels (gas or propane), and an electric furnace blows air over a hot element (similar to a hairdryer). But a heat pump is different: Acting like an air conditioner that also operates in reverse, a heat pump uses electricity to transfer heat, and by doing so can both heat and cool your home.



Air Source Heat Pump

These devices are more economical than their traditional counterparts because they simply move air, rather than producing their own warm or cool air. Heat pump systems come in two principal types: air source and geothermal. Air source systems transfer heat between the outside air and the air inside your home, while geothermal systems transfer heat between the ground and your home. One of the most common misconceptions about heat pumps is that they aren't adequate in cold-weather conditions. But the technology has improved significantly, and heat pumps have passed field tests in the Arctic Circle. And in Norway, which has an average winter temperature of about 20 degrees F, half the households use heat pumps.

What are the benefits?

Studies have shown electric heat pumps can be three to four times more efficient than a traditional gas furnace, and, when paired with energy efficiency upgrades such as insulation and air sealing, can help significantly lower your overall energy bills. Multiple studies by organizations such as RMI and NRDC have proven that heat pumps are more economical than traditional forms of heat. And because they both heat and cool a home, heat pumps avoid the cost of having to install a separate air conditioning system.



Geothermal Heat Pump System

Heat Pump Clothes Dryer

How does it work?

Heat pump dryers are closed-loop systems that recycle air and do not require a vent to the outside. They heat air by pulling it through a condenser and then sending it to the drum where it takes the moisture out of the clothes. The water is collected or drained as the damp air is pulled through an evaporator, and the loop starts over again.



Heat Pump Clothes Dryer
(CUB consumer Cathy C.)

What are the benefits?

These models use about 30 percent less energy than conventional units.

Heat Pump Water Heater

How does it work?

Using heat pump technology, these water heaters transfer heat from the surrounding air to the water in an enclosed tank and can replace the function of an electric or gas model. Note that if you are planning on installing a geothermal heat pump—which heats water stored underground—you will not need to purchase a separate system to heat your water.

What are the benefits?

These heaters use 70 percent less energy and can save a family of four an average of more than \$300 a year, Energy Star estimates.



Heat Pump Water Heater
(National Institute of Standards and Technology)



Induction Stovetop

Induction Stove

How does it work?

An induction stovetop offers a new way of cooking, using magnetic coils below an easy-to-clean surface of ceramic glass. (The ovens connected to these models operate the same as traditional electric models.) Induction stovetops only work with “magnetic” cookware. Most stainless steel, cast iron and other cookware are magnetic, but copper is not. Simple test: Any pot or pan that sticks to a fridge magnet will work.

Switching from a traditional electric stove to an induction model most likely will not require an electrical upgrade, but the transition from a gas stove will. You may need a new outlet, and your electric panel may need more amperages.

What are the benefits?

Energy Star estimates induction models are about 5-10 percent more efficient than conventional electric cooktops and three times more efficient than gas models. In addition to the financial benefits, a growing number of studies show the environmental and health benefits of moving away from a gas stove.

The Natural Resources Defense Council (NRDC) estimates that methane gas-burning appliances, including stoves, produce enough annual emissions in the United States to roughly equal the impact of a half-million cars. Burning fossil fuels like methane gas in our homes produces dangerous air pollutants such as carbon monoxide, nitrogen oxides, fine particulate matter and cancer-causing benzene.

Additional benefits: Induction stoves heat up and cool down faster than traditional electric/gas units. They keep your kitchen cooler, which helps keep down summer cooling costs, and the stovetop is safer, because it’s more difficult to burn yourself on the surface that cools faster.

Note: For each of the appliances, check to see if there are rebates, tax credits or other incentives available from utilities or state/federal government.

CUB Guidance

Electrifying your home is a step-by-step process. Consider these steps before you begin replacing your appliances.

Develop and complete a list of energy efficiency upgrades for your home:

The most thorough method of creating a personalized checklist of energy efficiency upgrades is through a home energy audit, which is offered by local contractors. (Check if there are utility or federal incentives that can help cover the cost of an audit.) Making your home as energy efficient as possible will maximize your savings when you switch away from gas, and it will help when it’s time to buy a heat pump: An energy efficient home may require a smaller, less expensive pump.

Pay attention to when you use your energy, in addition to how much you use:

There are programs available that can help you save money on your electric bills if your household can put off the bulk of your electricity usage to times when electricity demand is lower. By reducing peak electricity demand, these “demand response” programs, including ComEd’s Hourly Pricing and Peak Time Savings programs and Ameren’s Peak Time Rewards and Power Smart Pricing programs, help make the grid cleaner and more reliable, and they can help you save money.

Consider using more renewable energy: The electricity flowing into our homes comes from a number of sources — from the cleanest (wind and solar) to the dirtiest (coal and gas) — at any given moment. Thanks to strong Illinois policy, renewable energy has become much more accessible. For example, there are now strong incentives available to install solar panels on your property. If you can’t install panels — maybe you don’t have enough sun, or you don’t own your roof — then consider Illinois’ community solar program, which allows all customers to benefit from solar energy. Learn more at [CUB’s Clean Energy](#) page.

Note: Many alternative electricity suppliers sell plans that they claim allow you to support wind and solar power. But often those plans are overpriced and associated with out-of-state renewable energy projects that were already built long ago. Buyer beware!

For More Information

If you’re interested in electrification, consult these sources:

- CUB’s [Better Heat Guide](#) and [Electrification](#) page.
- For info on appliances: [EnergyStar.gov](#) and [Energy.gov](#)
- [Energy Star’s Rebate Finder](#)
- [Database of State Incentives for Renewables/Efficiency](#)
- [ComEd](#) and [Ameren](#) efficiency incentives/programs
- [Rewiring America’s Inflation Reduction Act calculator](#)