



# Heat Pumps

FACT SHEET

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With the ever-changing landscape of utilities and energy in Illinois, one topic that has recently gained traction is the use of heat pump systems. In addition to their potential to save consumers money, heat pumps are frequently cited as a way to promote more equitable changes in energy policy and the decarbonization of buildings around the state.

## What is a Heat Pump?

Heat pump systems are another method for heating and cooling your home in a more energy-efficient and cost-effective manner. Much like a refrigerator, heat pump systems utilize electricity to move heat from cool spaces to warm spaces and vice versa. Because heat pump systems move heat rather than generate it, they are a more economically sound way of warming your home.

## Are There Different Types of Heat Pumps?

The most common systems are air-to-air pumps, which transfer heat between the inside of your home and the outside air. Utilized in many places around the southern United States, air-to-air systems are increasingly common due to the development of technology that allows the systems to operate in subfreezing temperatures. Air-to-air pumps are easy to install and will work regardless of whether the home has existing forced air systems.

Geothermal heat pumps are higher-efficiency systems that transfer hot and cold air between your home and the ground or a nearby water source. These systems tend to have a higher cost to install. Because the subterranean layer of the Earth's crust remains at a relatively constant temperature, geothermal heat pumps are the most effective way to heat and cool your home and can reduce energy use by between 30 percent to 60 percent.

## Who Can Use a Heat Pump System?

Fortunately, the technology behind heat pump systems is continuously advancing, making it more affordable for consumers. While geothermal systems may cost more upfront, the systems pay for themselves as the consumer uses less energy to heat their home.

Modern infrastructure, particularly the development of all-electric homes and buildings, means that heat pump systems are increasingly common around the U.S. While many people may equate this type of construction with major cities, a recent [Rocky Mountain Institute \(RMI\) study](#) revealed that rural Midwesterners could save up to \$14,000 over 15 years by switching from propane furnaces to electric heat pumps.

A more recent version of that [RMI study](#) found that newly constructed all-electric homes are cheaper to build and operate across the country, including the Midwest.

## Why are Heat Pump Systems Important?

Heat pumps can help eliminate carbon pollution that causes climate change. Heat pumps use electricity rather than burning gas on-site at your home or business. As the grid changes and uses more wind and solar and less coal and gas, the pollution associated with heat pumps will continue to decrease as well. Heat pumps already have a pollution profile better than gas furnaces or boilers.

In addition to protecting the environment, heat pump systems are more cost-effective for the majority of consumers around the state. Heat pumps can help save a significant amount of money over the long-term, and these systems are emerging as a reliable alternative to utility-owned natural gas companies, which have raised costs significantly in recent years.

## How Do I Get More Information?

If you are interested in obtaining your own heat pump system, an excellent place to start is the [U.S. Department of Energy's \(DOE\) "Heat Pump Systems" page](#). The DOE website provides valuable information regarding the ins and outs of the various heat pump systems currently available. In addition, [Consumer Reports](#) outlines a number of considerations worth mulling over before buying a heat pump.