**Heat Pumps VS Furnaces**

According to the U.S. Dept. of Energy, heating accounts for about 45% of the average home’s total energy cost. That expense dwarfs other energy costs like lighting (6%) and cooking (4%). So, the type of heating system you choose for your home can have a major impact on your energy bill. One of the frequently asked questions about home heating is: “What’s better–a heat pump or a furnace?” The answer depends on a number of factors.

Both furnaces and heat pumps work by heating air that is distributed throughout the living space by a ductwork system. Supply ducts convey the heated air to registers (grilles) in different rooms, while return ductwork brings cooler air back to the system’s air handler to be reheated. While the ductwork system for heat pumps and furnaces is the same, there are other differences that will determine which heating option works best for you.

## Difference #1: Power Source

One of the major differences between furnaces and heat pumps is that furnaces burn fuel to generate heat, while heat pumps generate heat by using electricity to pump a refrigerant compound through condensing and evaporative cycles that move heat from one place to another. This brings us to one of the factors in deciding which heating method is best: the cost and availability of energy in your area. If you have access to cheap fuel (natural gas, propane, fuel oil, pellet fuel), a furnace might be the best choice. But if electricity is affordable, a heat pump is worth considering.

## Difference #2: Climate

Most heat pumps are the air-source type (see Difference #3). An air-source heat pump can’t heat efficiently when the outside temperature drops below freezing, because there’s very little outside warmth to move indoors.

If you’re relying on a heat pump where winters are long and cold, you can expect to pay more for heat than someone who lives where winter temperatures are mild. There’s another reason why homeowners in warmer climates prefer heat pumps over furnaces: A heat pump can also supply cool air for a central air conditioning system during hot weather. In a warm climate with mild winter temperatures, a heat pump can provide efficient, economical heat during the winter, and air conditioning during the summer.

## Difference #3: Other Types of Heat Pumps

Air-source heat pumps (the most common type) don’t perform efficiently in sub-freezing temperatures. But, there’s another type of heat pump that will perform very efficiently no matter how hot or cold it is outdoors.

A ground-source heat pump utilizes the constant temperature (around 50°F) of the earth as a heat source or (in cooling mode) as a heat sink. Long runs of plastic pipe buried at least 8ft. below grade, circulate refrigerant or an antifreeze solution to facilitate the heat exchange. Ground-source heat pumps are more expensive to install because of this subterranean circulation system, but they will deliver efficient, reliable performance in any climate.

## The Bottom Line: Cold Winters Need a Furnace

The best-case scenario for using an air-source heat pump to supply a forced-air heating system is a hot or mild climate where winter temperatures stay above freezing.

Ground-source heat pumps, though more expensive to install, will provide reliable, economical heat in any climate. In most cases, homeowners who live in cold climates will want to rely on furnaces for heat, mainly because heating efficiency is not affected by the outdoor temperature.

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