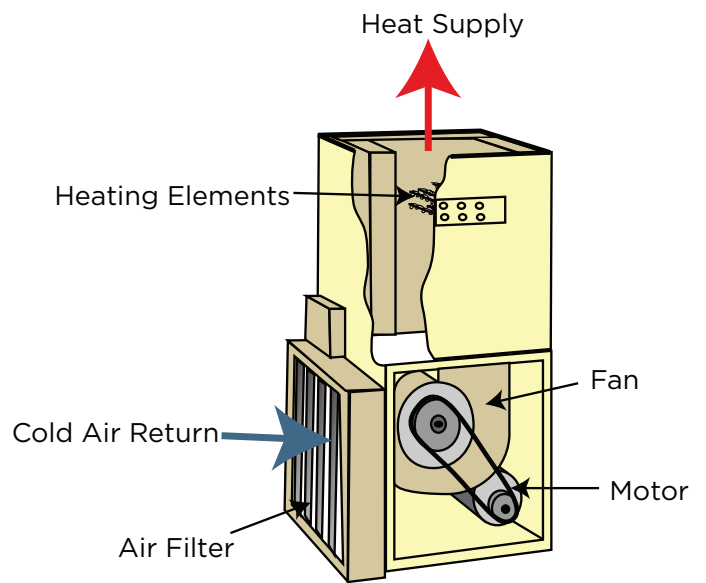


Electric Heat

Residential electric heating systems are clean, nearly one-hundred percent efficient, and easy to maintain. Unfortunately, electric heat tends to be the most expensive heating. Generating electric heat involves inefficiencies and energy losses during conversion from fossil fuel to heat energy, from heat energy to mechanical energy, from mechanical energy to electrical energy, and finally from the transmission of electricity to your home. In the end, it would be cheaper and more efficient to burn the fossil fuel directly in your home.

Except for one mitigating factor: delivery of the fossil fuel to the home comes at a cost. In remote areas where the delivery costs of fossil fuel are high, electric heat may be a less expensive option.



Electric Furnace

Heat Pumps

An electric heat pump does not generate heat, it just collects heat from outside and moves it inside. When you heat your house with electricity, you convert one unit of electrical energy into one unit of heat energy. With a heat pump, you might then use one unit of electrical energy to collect two units of heat energy, giving you one-hundred percent more heat than you paid for! The difficult part to understand is how you can collect heat from outside when it is cold outside. At about the freezing point, the electricity cost to pump heat into your house becomes more than the cost to generate heat directly. For this reason, heat pumps are not used in very cold climates. You see them more in places such as North Carolina.

Electric Furnace

An electric furnace is a simple and relatively trouble-free system. It has no heat exchanger, no gas valve, no igniters and no chimney. It simply has an electric resistance coil placed directly in the air stream. A blower moves air through the furnace and circulates the warmed air throughout the house.

Air conditioning can be added directly to the furnace, using the same ducting that circulates heat to also circulate cool air.

Electric Baseboard Heaters

Electric baseboard heaters provide heat exactly where you need it, as you need it. Baseboards allow you to set back the thermostats in the rooms you are not inhabiting, saving a significant amount of energy. Unfortunately, you cannot add air conditioning to this system without adding an independent ducting system.

Electric Hot Water Boiler

An electric hot water boiler uses electric elements to heat water. The heated water is pumped into radiators or convectors throughout the house. In terms of size, electric hot water boilers are small and inconspicuous.

Electric Radiant Heat

Today, under-floor electric radiant heat is popular in bathrooms and kitchens, usually added as accent heating rather than as the primary source of heat.

In the late '80s and early '90s, whole house electric radiant heating became popular. Flexible radiant panels were installed under the drywall in the ceiling, creating a comfortable temperature without revealing the heat source. These systems, however, had problems that led to a recall and their ultimate termination. Since then, whole house electric radiant heat has not been popular.

Electric Thermal Storage

In some geographic areas, suppliers bill electricity at variable rates, higher during peak demand time and lower during low demand. This system encourages consumers to cut back on energy use when the generating station is maxed out.

Electric thermal storage heating systems use energy during off peak hours to heat a thermal mass, such as blocks of ceramic, located inside the home heating unit. During peak hours when electricity is most expensive, the electric heat shuts off but heat continues to ooze out of the ceramic, thus heating the home.

Even though electricity is more expensive than other heating options, you can offset the higher energy cost with good insulation. Most building codes require much higher insulation levels if the home is to be heated with electricity. The insulation is the builder's problem and the energy savings are the home owner's benefit. And an electric heating system will require few repairs over its life.

