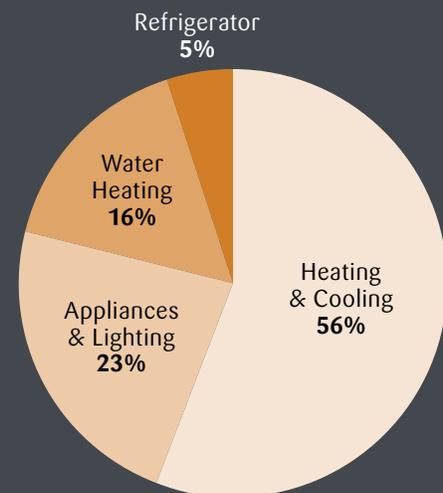


# CUT YOUR HOME HEATING AND COOLING COSTS WITH A HEAT PUMP



Heating your home accounts for the biggest portion of a typical utility bill. If you want to make a big dent in rising heating costs this winter, bring them back to earth with a high-efficiency heat pump.

A heat pump is designed to move heat from one place to another, transferring heat inside during the winter and outside during the summer. You win two ways: by drastically cutting your heating AND cooling costs.





## DISCOVER THE BENEFITS OF A HEAT PUMP

- Low heating costs
- Low cooling costs
- Dependability
- Comfort
- Low maintenance
- Easy operation
- Environmentally friendly and safe

Heat pumps efficiently heat your home in winter and cool your home in summer. During winter, an electric or gas furnace supplements your heat pump by providing the additional heat needed to keep you comfortable when outside temperatures are low.

Purchasing efficient appliances is the most effective way to control energy costs. Products with the ENERGY STAR® symbol use less energy, save you money and help protect the environment.

If your furnace and air conditioner are 15 years or older, you can save even more with a heat pump system. A typical 1,500-square-foot, ranch-style home in Lincoln could have the following annual heating and cooling costs:

60% AFUE\* gas furnace and 6 SEER air conditioner      \$1,307\*\*

80% AFUE\* gas furnace and 13 SEER heat pump      \$455

**Annual Heating & Cooling Savings      \$852 or 65%**

Actual costs depend on the number of people in your household, your lifestyle, the size of your home, the efficiency of your duct system, heating and cooling equipment and the insulation levels in your home. If you are considering the purchase of new equipment, you can compare your equipment's energy use and cost to new equipment on [www.les.com](http://www.les.com). Simply select "Your Home," click "Online Energy Checkup," and select "Comparison Tool."

\*Annualized Fuel Utilization Efficiency

\*\*Natural gas costs based on previous 12 month's rates. Electric costs are based on LES residential rates effective August 1, 2005. Cooling costs are based on 800 hours of operating time.

## GEOTHERMAL HEAT PUMPS

Geothermal heat pumps extract heat from the ground or from water below the surface. Because the ground and groundwater temperatures are typically constant year-round, a geothermal heat pump is more efficient than an air-source heat pump, which relies on outdoor air for its heat source. The geothermal heat pump is the most efficient heating and cooling technology available today. It is up to three times more efficient than the most efficient natural gas and propane heating systems on the market.

There are two types of geothermal systems: open loop and closed loop. An open-loop system typically uses conventional well water as its heat source. Closed-loop systems circulate a heat-transfer fluid through a system of buried plastic piping arranged either horizontally or vertically. Local water use and disposal regulations may limit the use of open-loop systems.

Some geothermal heat pumps include a feature to preheat water before it enters a water heater. Other geothermal heat pumps integrate the complete water heating system into the design and operation. These systems provide all the hot water needs for a home or business.

Air-source heat pumps are more common than geothermal heat pumps because they do not require burying tubing underground and installing water wells. However, geothermal heat pumps do have a few additional benefits:

- Quieter performance
- Provide hot water, reducing water heating costs up to 50 percent
- The unit is located inside the home

## AIR-SOURCE HEAT PUMPS

Air-source heat pump efficiency is designated by the terms, Heating Seasonal Performance Factor (HSPF) for heating and Seasonal Energy Efficiency Ratio (SEER) for cooling. A higher efficiency rating means a lower cost of operation. The Department of Energy requires a minimum 13 SEER standard for new residential heat pumps and central air conditioners manufactured after January 2006. The biggest expense of any heating and cooling system is not the cost of buying and installing it, but the monthly cost of operation during its lifetime. Therefore, you actually save money in the long term by purchasing the more expensive, energy-efficient model.

A heat pump's heating and cooling capacity should match your home's heating and cooling demands to work most efficiently. An undersized system won't adequately cool your home, while an oversized one won't dehumidify properly and can make the house feel drafty in the winter. Ask a licensed heating and air conditioning contractor for a heating and cooling load system analysis.



## ENERGY-EFFICIENT FEATURES

**Programmable thermostats** can be programmed for one or more temperature setback periods per day. The setback thermostat reduces the use of the more expensive supplemental furnace heat to warm a home to a comfortable temperature. A microprocessor senses the temperature difference when increasing the temperature, and gradually increases the temperature over a longer period of time. This allows the heat pump to provide a temperature increase while minimizing the use of the more costly supplemental heat from the furnace.

**Variable-speed air handlers** control the amount of air delivered, providing temperatures up to 20 degrees warmer than typical heat pump systems in the heating mode. They also remove up to 30 times more humidity than a standard air handler. When operating in the continuous fan mode, they provide more even temperatures and filter the indoor air 100 percent of the time—not just when the system is operating. They are also quieter since they slowly ramp up and down, rather than starting very quickly like standard units.

For more information about heat pumps on [www.les.com](http://www.les.com), select “Your Home” and click the “Online Energy Checkup” link to visit the Energy Depot Library or call 473-3270.



LES supports energy conservation and the ENERGY STAR® program because energy efficiency reduces the need for LES to generate higher-priced power resulting from increased demand. Energy conservation helps to keep rates low for all customers.