



The Power of Human Connections



cost-effective

energy-efficient

environmentally responsible

### Applications

Air source heat pumps are easy to install in new construction and are the ideal choice when it is time to update or replace older, inefficient heating systems or aging central air conditioners. Heat pumps can use your home's existing ductwork, making it easy to upgrade to a new high-efficiency heating and cooling system. They can also be used in an add-on role, working in tandem with your existing furnace in addition to adding a highly efficient cooling system for significant savings year round.



### Testimonials

**"My wife likes the even temperature and how quiet it runs. I like the low cost of operation."**

**"We are so happy our REC helped us make this decision. It's much more economical than our old one."**

**"We like our new system and have greater peace of mind knowing that there is no longer an LP tank in our yard."**

### Financial Incentives



Financial incentives may be offered to members who install air source heat pump systems. Cash incentives, special heating rates, low-interest financing and federal and state tax credits may be available. Many homeowners have already taken advantage of these programs. We also provide evaluation programs that allow you to fairly compare one heating and cooling system with another.



### Year-round Benefits

#### Comfort

even and consistent temperatures in the home

#### Affordability

savings from efficient heating and cooling in a single unit

#### Peace of Mind

knowing it's reliable and low maintenance

## The Versatile Air Source Heat Pump



An air source heat pump is versatile. It's actually two units in one: an efficient home heating system and an economical air conditioner. Advancements in efficiency and technology have greatly improved air source heat pump reliability and home comfort. The air source heat pump is the most common type of heat pump, transferring heat between your house and the outside air. Some models even provide supplemental water heating for your home.

While heat can be extracted from the air even in the coldest weather, heat pumps typically use built-in supplemental heating in extremely cold climates to ensure comfort.

## Energy Efficient Savings

Heat pumps pump heat from a source at a low temperature and discharge it at a higher temperature translating to more efficiency and less operating costs.

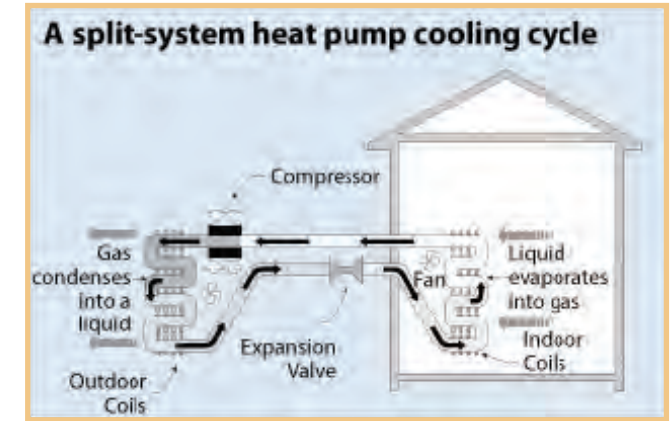
According to the U.S. Department of Energy, if you heat with electricity, a properly installed heat pump can reduce the amount of electricity you use for heating by as much as 30 to 40 percent.

## Selecting an Air Source Heat Pump

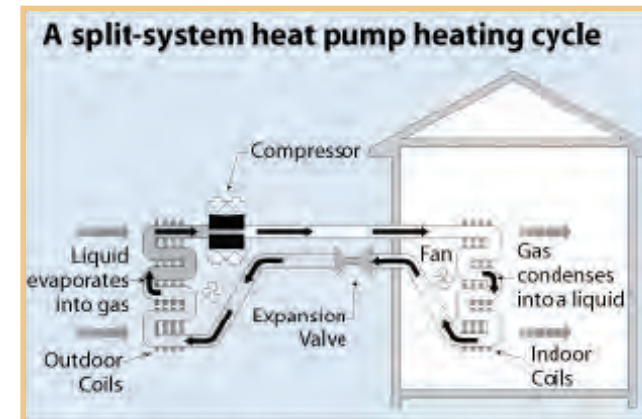
- Consider the heating efficiency, indicated by the heating season performance factor (HSPF) and cooling efficiency, indicated by the seasonal energy efficiency ratio (SEER). The higher these factors, the more efficient the system. Although the cost of the higher efficiency system is more, the energy savings can pay for the higher initial investment in a short time.
- For greater efficiency, look for a system that qualifies as ENERGY STAR®.
- Consider a quality thermostat that will help control the entire system, ensuring you take full advantage of the comfort and efficiency your unit has to offer.
- Select a qualified contractor who will properly install your heat pump and thermostat.
- Check with your cooperative to make certain the equipment you choose qualifies for their incentive programs.

## How Air Source Heat Pumps work

An air source heat pump provides efficient heating and cooling for your home. This is possible because it moves heat, using a refrigerant and coils, much the same way as your refrigerator works. Heat pumps do not rely on the combustion of fuels like oil, propane or natural gas. In winter, the heat pump's outside unit captures heat that exists naturally in the atmosphere and transfers it to the inside unit where it is amplified to warm your home. In summer, the process is reversed to remove heat and excess humidity, leaving your home cool and comfortable.



In cooling mode, an air source heat pump evaporates a refrigerant in the indoor coil; as the liquid evaporates it pulls heat from the air in the house. After the gas is compressed, it passes into the outdoor coil and condenses, releasing heat to the outside air. The pressure changes caused by the compressor and the expansion valve allow the gas to condense at a high temperature outside and evaporate at a lower temperature indoors.



In heating mode, an air source heat pump evaporates a refrigerant in the outdoor coil; as the liquid evaporates it pulls heat from the outside air. After the gas is compressed, it passes into the indoor coil and condenses, releasing heat to the inside of the house. The pressure changes caused by the compressor and the expansion valve allow the gas to evaporate at a low temperature outside and condense at a higher temperature indoors.