

Geothermal Heat Pumps

How They Work

The earth has a handy property that makes geothermal systems possible: year around temperature stability. Picture a long pipe that loops underground. Pour ice water into one end of the pipe and warmer water comes the other end. The earth's stable temperature is warmer than the water and gives some of its heat to it. Likewise, warm water going in would come out cooler. This simple piece of physics is what makes the geothermal system work.

Fluid cycles through a "loop field," gathering up heat in the winter. A compressor concentrates this natural energy and uses it for home heating. In summer, the process simply reverses.

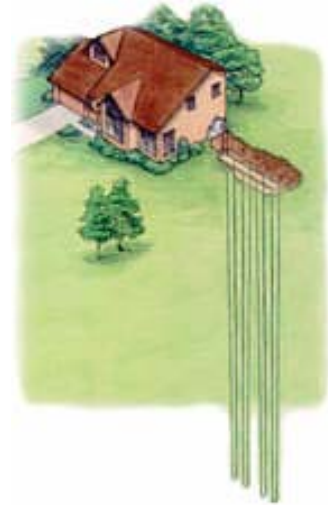
The whole system is highly efficient and environmentally friendly. You aren't creating heat—you're only moving it from one place to another. And of course high efficiency means low operating cost.

Flexible Options

Vertical loops use bore holes to sink tubing deep into the ground and require very little land. The number of loops is varied to precisely match the heating or cooling needs of your home.



When more land is available, horizontal loops can be trenched in about eight feet beneath the surface. Other innovative options such as the "slinky loop" make geothermal systems flexible and adaptable. Verendrye Electric Cooperative can help you decide which is best and put you in touch with a qualified installer.



Down to Earth Savings

Geothermal systems are the most efficient home heating and cooling option available today! They don't create heat and the system only requires a small amount of electricity to move heat from the earth to your home. Ground source heat pump systems also qualify for a special electric heating rate from Verendrye. Typical heating and cooling cost in North Central North Dakota for a average home are about \$350 per year.

Rebates and Financing

Rebates based on system size and low interest financing is available from Verendrye for the purchase and installation of a ground-source heat pump system. Call our member service department at 1-800-472-2141 for more details.