



PRESS RELEASE

Stacy Wemhoff
Communications Coordinator
swemhoff@loup.com
(402) 562-5711

FOR IMMEDIATE RELEASE
5/7/2019

EnergyWiseSM Tip: Ground Source Heat Pumps

By Cory Fuehrer, NPPD Energy Efficiency Program Manager

If you haven't already, you will likely run your air conditioning system within the next few weeks. Most public power utilities in Nebraska have higher rates from June through September to offset increased costs associated with generating electricity during peak-use periods.

Rather than worry about how fast your air conditioner is making your electric meter spin and raising your monthly bill, wouldn't it be nice to know your system is cooling and heating your home year-round? The solution might be right under your feet!

A ground source heat pump — also called an earth-coupled heat pump, or a geothermal heat pump — operates by transferring heat to and from the ground or groundwater. Below the frost line, the temperature of the earth in Nebraska stays fairly constant at 50–55 °F. Heat pumps provide summer cooling by extracting heat from your home and transferring it into the earth through a mechanical process. In the winter, that process can be reversed so the heat pump extracts heat from the earth and “pumps” it into your home.

Since it is much more efficient to transfer heat than to create it with electrical resistance or fossil-fueled furnaces, a ground source heat pump can provide up to five times the amount of heating or cooling energy for each kilowatt-hour used to run the system — even during extreme temperature conditions.

Ground source heat pump systems generally fall into two categories: closed-loop and open-loop. Most closed-loop systems circulate an antifreeze solution, which is usually made of plastic tubing buried in the ground or submerged in water. A heat exchanger transfers heat between the refrigerant in the heat pump and the antifreeze solution in the closed loop.

Open-loop systems use well or surface water as the heat exchange fluid that circulates directly through the heat pump system. Once it has circulated, water returns to the ground through the well, a recharge well, or is discharged above ground. This option is especially practical when there is an adequate supply of relatively clean water and all local codes and regulations regarding groundwater discharge are met.

Ground source heat pump systems are reasonably warranted by manufacturers, and their working life is estimated at 25 years for inside components. The plastic tubing for closed-loop systems will last 50 to 100 years. Maintenance costs tend to be significantly less with a ground source system when compared to fossil-fueled heating systems.

Yes, set-up costs for ground source heat pumps are higher than for conventional systems. However, ground source heat pump systems qualify for a number of programs that dramatically reduce your final cost. First, for the remainder of 2019, homeowners may claim 30 percent of qualified expenditures associated with installing a ground source system as a tax credit that can be taken on federal income tax liability. The tax credit decreases to 26 percent in 2020, 22 percent in 2021 and expires at the end of 2021.

Customers may also receive up to \$3,300 from the EnergyWiseSM High Efficiency Heat Pump program — contact Loup Power or Cornhusker Power for more information.

It's a great time to consider ground-source heat pumps.

For additional information on how to make your home, business or school EnergyWiseSM, contact Loup Power District, Cornhusker Public Power District, Nebraska Public Power District, or your local public power utility. While you're at it, check out the EnergyWiseSM programs designed to help you save money. Find energy efficiency information online at www.loup.com, www.cornhusker-power.com, and www.nppd.com/save-energy.

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