

# Heat Pumps

## Heat Pumps

Off-peak dual fuel rate (winter): 7.0¢/kWh

Off-peak dual fuel rate (summer): 9.2¢/kWh

Heat pumps – air source and geothermal – help you capture naturally occurring heat from the air or the earth and move it where you want: indoors in winter, outdoors in summer. And the technology is one of the most efficient heating and cooling systems you can choose.

Heat pumps can be interrupted during periods when the demand for electricity is high, which may qualify you for our off-peak dual fuel electric rates. Since heat pumps also function as your home's central cooling system, cycling is required.

*Rebates may apply if unit is connected to PPCS' load management system (see reverse side). Off-peak electric rates are available with this program with a qualifying back-up heat source, if applicable.*

### Air source heat pumps

With an air source heat pump, you get air conditioning plus a cost-effective heat source.

An air source heat pump transfers heat between your house and the outside air. During the summer months, when used as an air conditioner, an air source heat pump cools your home by transferring heat from indoor air outside. In the heating mode, an air source heat pump can efficiently meet your home's heating needs. Most heat pumps have a balance point when supplemental heat kicks in to maintain the thermostat setting when the temperatures dip below freezing.

The addition of a modulating electric plenum heater or nonelectric backup heat source can provide supplemental heat automatically during those times.

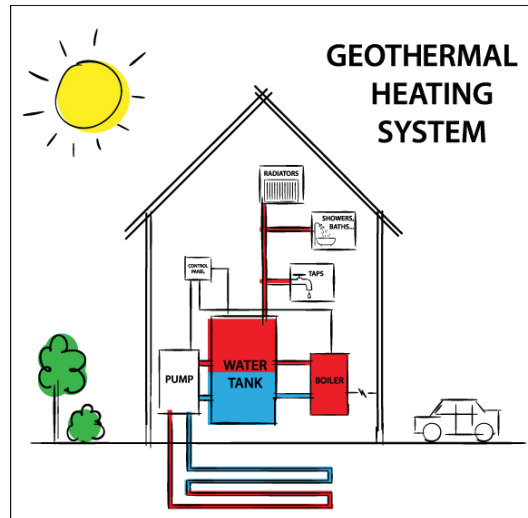
### Geothermal heat pumps

Geothermal heat pumps let you take advantage of consistent temperatures below ground, all year round.

A geothermal heat pump functions like other heat pumps, using a refrigeration cycle to move heat between the indoor and outdoors. Instead of moving heat to and from outdoor air, a geothermal heat pump uses the earth. It is a complete heating and cooling system operating at up to 350 percent efficiency.

A water and antifreeze solution is circulated through a series of plastic pipes (ground loops) that are buried six to eight feet underground. Ground loops are used to transfer heat, because underground temperatures remain stable. In the heating mode, heat pumps use a typical refrigeration system to extract heat from the ground loops, concentrate the heat and circulate it through standard ductwork.

The system reverses in summer for air conditioning and uses standard ductwork to circulate cool air through your home.



## Load Management Program

Load management is an energy conservation technique used by our wholesale power supplier, Dairyland Power Cooperative, to balance the demand for electricity with the ability to generate or economically purchase electricity.

When demand for electricity exceeds the seasonal load and capacity limits, or if the cost to purchase energy is too high, equipment, such as electric heating systems and water heaters, are switched off by Dairyland through a radio signal-based system.

Load management programs help PPCS manage electric load during peak periods of demand and reduce wholesale energy costs paid to Dairyland. Although extreme cold or hot weather conditions may affect peak demand, load management programs are structured with enough flexibility so that load reduction can be justified at any time, day or night, to save you and your cooperative money.

Dairyland is a member of the Midwest Independent Transmission System Operator (MISO) which ensures safe, cost-effective reliable power and equal access to electric generation and transmission across 15 U.S. states and in Manitoba, Canada. Consequently, Dairyland's use of load management may also be affected by the energy demands and weather patterns of the larger MISO region.

Load management receivers and related equipment are provided and installed by PPCS at no cost to the member.

**For more information, call your Pierce Pepin Cooperative Services energy advisors or visit [www.piercepepin.coop](http://www.piercepepin.coop).**

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