RENEWABLE ENERGY

Geothermal heat pumps for Wisconsin homes, businesses and schools

FACT SHEET

BIOMASS

GEOTHERMAL

HYDROPOWER

SOLAR

WIND

Call Focus on Energy to learn about renewable energy options for your home, business or organization. The Renewable Energy Information Center can help with many renewable energy topics. Call 1.800.762.7077 or visit www.focusonenergy.com for additional information.

ENERGY CENTER OF WISCONSIN

Installing a geothermal loop for a home.

Wisconsinites have a safe, reliable and affordable source of renewable energy right under their feet. Geothermal energy—the ability of the earth to store heat—is an efficient way to heat and cool our homes and businesses.

HEAT PUMP SYSTEMS

Geothermal or ground source heat pump systems use a series of underground tubes to take advantage of the constant temperature just six feet beneath the earth's surface. In winter, heat is transferred from the ground to your house or building. In summer, the process is reversed. Indoor heat is pumped back into the ground, keeping you comfortable through the same process that chills your refrigerator. These systems are used in homes, offices and schools throughout Wisconsin and the United States.

HOMES

Wisconsin homeowners can save energy costs year-round, conserve energy, increase comfort and reduce home maintenance with geothermal heat pump systems. The underground coils are safely installed out of sight in the backyard. Homeowners also can receive the benefit of supplying their home's hot water with their system, providing further cost savings.

A geothermal heat pump system is very efficient and can cut your total energy consumption even though it uses more electricity than fossil-fuel-based heating systems. For example, if you include the cost of this system in a 30-year mortgage you will save about $5 per month on your utility bill if your alternative is natural gas, $25 per month if your alternative is LP gas and $100 per month if your alternative is electric heating. The savings are due to the reduction in energy costs being greater than the increase in the mortgage.

Wisconsin homeowner Scott Fahey built his 2,100 square-foot house with a geothermal heat pump. In its first year, the system supplied constant

LIEUTENANT KEVIN LEMKE

This Fond du Lac, Wisconsin, high school uses a geothermal system for heating and cooling.

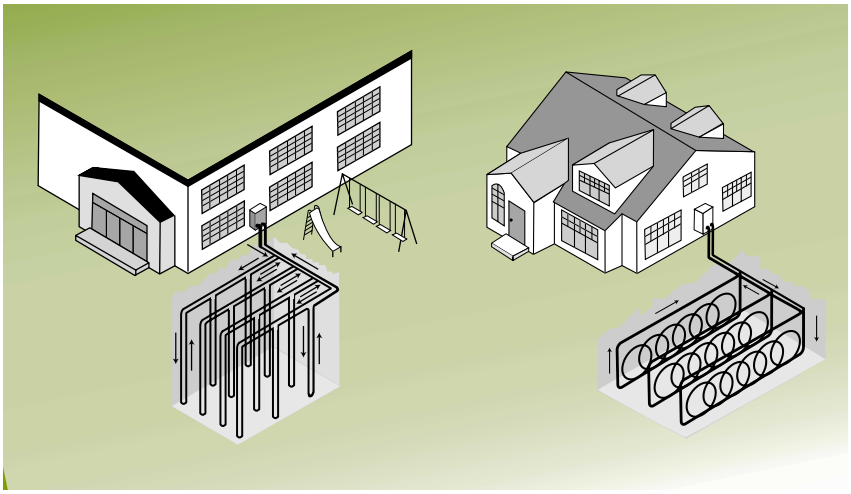
100°F air to the home all winter, except during a period of extreme cold, when a back-up propane furnace was used as a supplement.

SCHOOLS

Geothermal heat pump systems can increase comfort and decrease costs for Wisconsin schools. Many schools like this technology because it allows each teacher to control his or her own system for improved comfort in the classroom. Temperature control can be applied to heat or cool whole buildings for events in just one area.

Onamia Elementary School, located 100 miles north of the Twin Cities in Onamia, Minnesota, is heated and cooled by a geothermal heat pump system. The system cost $50,000 more than a conventional heating system, but when the price of an air conditioner is added in, the system actually costs less. Onamia is one of 16 schools in Minnesota proving that geothermal heat pump systems can handle tough, northern climates. Two new Wisconsin schools in Fond du Lac and Evansville have recently selected the geothermal option.

focus on energy℠
The power is within you.



ENERGY CENTER OF WISCONSIN

Geothermal systems can be used in residential and commercial settings.

OFFICE BUILDINGS

Geothermal heat pump systems are especially applicable to office buildings, where the system's up-front costs can be competitive with traditional heating and cooling systems. There are no roof-mounted components, which saves you extra expenses in maintaining your roof. Because the systems have fewer mechanical parts, they can reduce your operation and maintenance costs.

In many cases there are significant construction cost benefits if the mechanical room can be eliminated. At about $50 per square foot construction cost for unfinished spaces, this can add up to significant savings.

Size is no barrier for geothermal heat pump systems. The 1.7-million-square-foot Galt House East Hotel and Waterfront Office Building in Louisville, Kentucky, saves tens of thousands of dollars per month in reduced energy costs with a system that initially cost less to install than a conventional heating and cooling system.

COMMERCIAL SPACE

Geothermal heat pump systems can help Wisconsin businesses become more competitive. Because the systems cost less to run, they will allow you to redirect your resources to your customers. The comfort provided by these systems will allow your employees to work in a healthier, more pleasant environment.

The Skunk Creek Conoco Station 85 miles north of the Twin Cities is showing that northern businesses can benefit from these systems. The system heats and cools the 4,300-square-foot facility, provides hot water for the car wash, refrigerates food and makes ice. Since the system is not roof-mounted, the need for a flat roof is eliminated, which allows for a more architecturally interesting design. Estimated savings are $5,000 per year in energy costs alone, and more from reduced maintenance costs. Payback on the system is estimated to be between four and six years.

FOR MORE INFORMATION

www.focusonenergy.com
Focus on Energy

www.doa.state.wi.us/depb/boe/publications/yelpages.asp
Renewable Energy Yellow Pages

www.wisgeo.org
Wisconsin Geothermal Association
P. O. Box 248
Rice Lake, WI 54868
Toll-Free 1.888.436.7040
Office 715.736.GEO1 (4361)
FAX 715.736.GEO2 (4362)
E-mail wisgeo@chibardun.net

www.geoexchange.org
Geothermal Heat Pump Consortium, Inc.
701 Pennsylvania Ave., NW
Washington, DC 20004-2696

Focus on Energy is a public-private partnership offering energy information and services to energy utility customers throughout Wisconsin. The goals of this program are to encourage energy efficiency and use of renewable energy, enhance the environment, and ensure the future supply of energy for Wisconsin. For information about the Focus on Energy services and programs, call 1.800.762.7077 or visit www.focusonenergy.com.

Publication REN2004-0602

focus on energy℠
The power is within you.