

# Northwestern REC

A Touchstone Energy® Cooperative 

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# NEWS *from the* REC

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## Electric Meters: More than Kilowatt Counters

No matter the size, style, or age, all homes across the country have one thing in common: a small meter, constantly keeping a tally of electricity use. Some dutifully track kilowatts with spinning discs—a technology that dates back to 1888—while many have been upgraded to handle the information demands of our digital age.

Most digital meters contain chips that enable them to send kilowatt-hour use readings and other data to your electric cooperative—what’s called automated meter reading, or AMR. Some units go a step further and can send and receive signals from a co-op, opening up a world of possibilities. This allows co-ops to install AMI, or advanced meter infrastructure systems.

“AMR has existed in one form or another since the mid-1980s,” explains Brian Sloboda, senior advisor with the Cooperative Research Network. “Initially it was simply a more efficient way to conduct monthly meter readings. Today,



Photo & article by Scott Gates, NRECA

the collection of monthly meter reads is just the tip of the iceberg. Faster, two-way systems allow the co-op to view meter reads once an hour and in some cases even more often. When teamed with other automated equipment at substations and on distribution lines, AMR can evolve into an advanced meter infrastructure system.”

Once AMI systems are in place, a wide range of applications can become available, including electricity theft detection, outage management, remote disconnect and reconnect, and “blink” monitoring, among others.” An estimated 50 percent of electric co-ops have deployed AMI in some fashion—far and away tops in the electric utility industry.

AMR and AMI are also key components of what’s called a “smart grid,” an evolving, “self-healing” transmission and distribution network that can track the flow of electricity with great precision and efficiency. ♦

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You're talking about the environment.  
We're working to keep the Earth green.

## TIPS from the REC

### Watch Out for Electrical Hazards on the Farm

Those who live and work on a farm know that not only is it hard work, but it can be dangerous, too. Each year, farmers across the country are electrocuted when large farm machinery comes into contact with overhead power lines.

Often, the situation occurs because a newer, bigger piece of equipment no longer clears a line the way a smaller one did. In addition, shifting soil may also affect whether or not machinery avoids power lines from year to year.

The following tips will help keep everyone on a farm safe:

- Look over work areas carefully for overhead power lines and utility poles.
- Make sure you have ample clearance when moving large machinery such as combines, grain augers, pickers, bailers, and front-end loaders. Do this every year as equipment sizes or soil conditions may change.
- Store large equipment properly if near or under power lines. When planning new construction, such as adding a grain bin, contact Northwestern REC's Field Services Department at 800/473-3567.
- Be extra careful when working around trees and brush; they often make it difficult to see power lines.
- Train all farm workers to keep an eye out for overhead power lines. ♦

*Adapted from an article by Christine Grammes, NRECA*



**Know what's below.  
Call before you dig.**

## Heating and Cooling Efficiently with Heat Pumps

Managing the temperature in a home or business has the hands-down biggest impact on energy costs. In trying to keep warm in winter and cool during summer, the average U.S. homeowner spends \$1,400 annually, accounting for 56 percent of all home energy expenses.

While this outlay can be trimmed by tweaking efficiency, some folks have taken it a step further and installed heat pumps, highly efficient devices that can provide both heating and cooling comfort.

As the name implies, heat pumps simply move heat from one place to another. During winter months, they collect and consolidate heat from outside sources and move it inside; during summer months, they reverse the flow and send warm, indoor air out.

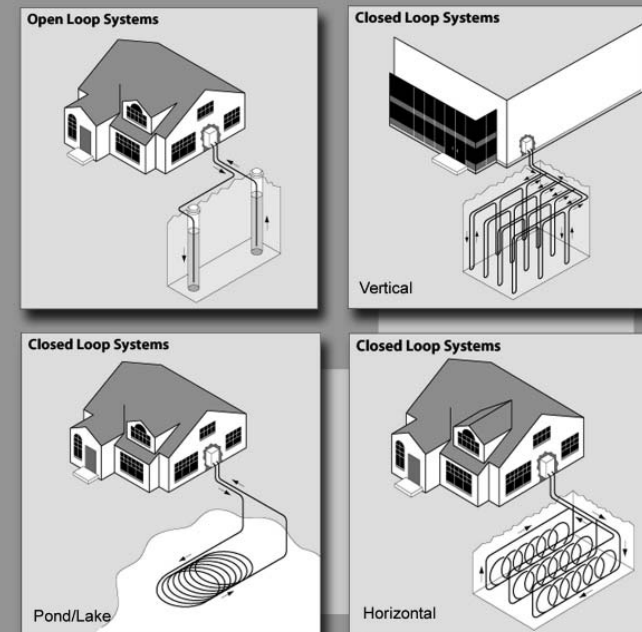
The most common type is an air-source heat pump that resembles an air-conditioning unit and uses the air around it to transfer heat. Geothermal heat pumps, also known as ground-source heat pumps, use the earth itself or groundwater as a means of transferring heat.

When replacing an electric heating system, air-source heat pumps can trim the amount of electricity needed for heating by as much as 30 percent to 40 percent. Although a typical high-efficiency, ENERGY STAR-qualified air-source heat pump comes with a substantial \$6,000 price tag, it's estimated that energy

savings will offset the purchase price within five years.

### Types of Geothermal Heat Pump Systems

There are four basic configurations for geothermal heat pump ground loops. Three are "closed-loop systems," where a water and antifreeze solution is continually moved through pipes; the fourth is an "open-loop system," where groundwater or well water is used.



Source: U.S. Department of Energy, Office of Energy Efficiency and Renewable Energy

Geothermal heat pumps come in two types: a groundwater (open-loop) system uses well water; an earth-coupled (closed-loop) model moves a water and antifreeze solution through underground pipes. They can cost anywhere from \$15,000 to \$40,000 for an average home—excavation, installation of underground pipes, and (with a groundwater heat pump) well drilling accounts for much of the price tag. But annual geothermal energy savings aver-

age between 30 percent and 71 percent, according to the Geo-Heat Center, a part of the Oregon Institute of Technology, provide fairly rapid payback. Even better, ENERGY STAR versions use up to 60 percent less energy than their standard air-source counterparts.

Homeowners and business owners considering a heat pump should discuss their options with Bruce Hough, Energy Services Representative, at Northwestern REC. It is important to learn the ins and outs of available technology. State and federal rebates may be available for some systems.

To learn more about various electric heating options for your home or business, visit [www.Northwestern-REC.coop](http://www.Northwestern-REC.coop), or contact Bruce Hough at 800/472-7910, or by email: [bhough@northwesternrec.coop](mailto:bhough@northwesternrec.coop). ♦

## News from the Co-op

**New DOT CO-OP with E-bill** - In January 2009, Northwestern REC launched a new interactive website. The new site includes online bill viewing and payment options. There is also a community events calendar that allows the general public to submit events for display. Check it out at [www.NorthwesternREC.coop](http://www.NorthwesternREC.coop).

**UPCOMING Home Show** - Northwestern REC will present information regarding all the benefits of efficient electric heating and cooling at the following Spring show:

*Builder's Assoc. Home Show: April 2 - 5, at the Family First Sports Park on Oliver Road in Erie.*

**Nominating/Member Meetings** - Each Spring, Northwestern REC schedules several meetings where members can receive current business information as well as nominate a fellow member to run for Board of Directors. The following meetings have been scheduled:

Wednesday April 1 - Edinboro VFW

Thursday April 2 - Vernon Central Hose Company

\*Monday April 6 - District 5, Northwestern REC office

\*Tuesday April 7 - District 3, Elgin-Beaverdam Fire VFD

\*Wednesday April 15 - District 10, Cooperstown VFD

Members are encouraged to attend these free meetings, which also include dinner and door prizes. Contact Northwestern REC at 800/472-7910 for reservations and for further information.

\* Indicates which are nominating meetings.

**Annual Meeting** - Northwestern REC's Annual Meeting is scheduled for Saturday, August 1, 2009, at the Crawford County Fairgrounds. Invitations will be mailed in July, and reservations can be made by calling Northwestern at 800/472-7910.