

Geothermal heat pumps rely on the ground's relatively constant temperature to provide winter heating and summer cooling.



## Tax incentive available for geothermal heat pumps

Geothermal heat pump systems harness energy found in the ground and can cut heating and cooling costs by up to 70 percent.

The geothermal systems are incredibly energy efficient, but they are more expensive up front than air-source heat pumps. They can cost anywhere from \$15,000 to \$40,000 for an average home depending on excavation and installation needs.

The two-year budget deal signed by President Donald Trump on Feb. 9 will help make them more affordable. It extends energy tax incentives for geothermal systems through 2021. Those who install a qualified system can receive a tax credit equal to 30 percent of the equipment and installation cost.

In addition, NAEC's Energy Efficiency and Conservation Loan Program allows members with approved credit to borrow money to install geothermal heat pumps and other energy efficiency measures. The fixed interest rate currently is set at 3 percent. A printed EECLP loan application is available at NAEC offices in Salem, Mountain Home or Ash Flat. An online application is available at [www.naeci.com/credit-application](http://www.naeci.com/credit-application).

### How geothermal heat pumps work

Outside temperatures vary, but the top 10 feet of earth remains a relatively constant 50 to 60 degrees Fahrenheit

temperature year-round. Geothermal heat pumps rely on energy of the ground to move heat into and out of a building. This provides winter heating and summer cooling.

Also called ground-source heat pumps, there are two types of geothermal units: a groundwater (open-loop) system uses well or pond water, and an earth-coupled (closed-loop) model uses a water and antifreeze solution. Systems can be installed horizontally or vertically, depending on available space and budget.

Geothermal efficiency depends on climate, soil, water conditions and landscaping. For example, soil that transfers heat easily requires less piping. Rocky terrain may require a vertical loop system instead of a more economical horizontal loop system.

When buying a geothermal system, compare two elements: coefficient of performance for heating, and the energy efficiency ratio for cooling. More information on these specifications as well as minimum recommendations for each type of geothermal heat pump system is available at [www.energystar.gov](http://www.energystar.gov).

NAEC's energy advisers can provide guidance on the best geothermal system for a member's home or business. To speak with an energy adviser or find out more information on an EECLP loan, please call the co-op at 870-895-3221 or visit one of our offices from 8 a.m. to 4:30 p.m. Monday through Friday.

# Power cost adjustment rises due to extreme cold

The power cost adjustment line item on your NAEC bill usually does not get much attention, except during times of extreme weather conditions, such as the winter weather that Arkansas experienced in December and January.

When the amount paid by NAEC to our wholesale electric supplier for the energy we purchase differs from the amount that is built into our base electric rates, an adjustment is applied to each member's bill. This adjustment factor is multiplied by kilowatt hours used in the current month. It can either be a charge or a credit.

NAEC purchases its energy from Arkansas Electric Cooperative Corporation. In 2017, AECC's electricity was generated by coal (54 percent); natural gas (18 percent); and hydro, wind and solar (18 percent). The remaining came from regional energy markets. The power cost adjustment is usually small, and there is no profit added. It is a direct pass-through from AECC to members.

## Why has the power cost adjustment risen?

In December and January, Arkansas and large portions of the country experienced significant "polar vortex" events that brought extremely cold air from the Arctic polar region into the U.S. During such events, natural gas is used more for heating, so there's a great increase in demand. Electric utilities use natural gas to generate electricity, and gas utilities provide gas directly to industries, businesses and homes. That competition raises the price of gas.

AECC has a diverse portfolio of different types of generation that fortunately reduces the cost impact of severe weather events. However, the unusually cold weather like Arkansas experienced in December and January resulted in much higher than normal demand for natural gas, and therefore much higher wholesale fuel costs. The fuel cost adjustment only includes the actual cost of fuel that the utility had to purchase during the month. Sometimes, there is a lag between when the cold weather event occurred and when the member receives the bill. That is the case for NAEC members this month.

AECC intentionally owns a variety of generation plants with different types of fuels, so extreme weather events have a lower impact on members' bills. The primary goal is to provide the most reliable power at affordable prices.



Teenagers visit the Korean War Veterans Memorial on the 2017 Youth Tour to Washington, D.C.

## 2018 Youth Tour applications due to NAEC by March 16

North Arkansas Electric Cooperative is accepting applications for the 2018 Electric Cooperative Youth Tour. Four high school juniors will be selected to attend the all-expense-paid trip to Washington, D.C., June 8-14.

The application is available at [www.naeci.com/youth-tour](http://www.naeci.com/youth-tour) and at NAEC offices. The co-op must receive completed applications by March 16. Please call 870-895-6210 with any questions.

## Applications due by April 13 for Round Up® scholarships

The member-funded Operation Round Up® program gives thousands of dollars in scholarships to local graduating high school seniors each year. Last year, 19 students were awarded a total of \$17,500 to help them further their education.

NAEC now is accepting applications for the 2018-2019 scholarship program. Students may download the application at [www.naeci.com/operation-round-up-scholarship](http://www.naeci.com/operation-round-up-scholarship).

Applicants must return the typed, completed application to NAEC by April 13. Along with the application, they must include a seven-semester high school transcript and three letters of recommendation.

For more information, please call 870-895-6210 or email [tmoss@naeci.com](mailto:tmoss@naeci.com).