

# Somerset Rural Electric Cooperative, Inc.

A Touchstone Energy® Cooperative 



One of 14 electric cooperatives  
serving Pennsylvania and New Jersey

## Somerset REC

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## From the General Manager



# Too many eggs in one basket?

By Ruston Ogburn

I STARTED a series of articles in July to update you on the rapid changes in the electric industry. The previous articles discussed the retirement of electric generators and how new generation impacts the electric grid. This article looks more closely at generator availability.

The availability of a generator to run “around the clock” has always been an operational concern. This issue has been amplified recently due to the retirement of many coal and some nuclear generators. This concern has also become political in the past few years.

The operational concerns are very straight-forward. Electricity production needs to meet demand instantaneously with very little compromise and economic impact when the lights go out. Grid operators focus much of their time on maintaining this continual balance.

Our electric grid has plenty of generation with roughly 25 percent more generation capacity than we currently need to match our highest electric demand.

These generators have various fuel supply capabilities. Nuclear and coal plants (supplying roughly 50 percent of our electricity) can run for at least a month and often much longer without receiving new fuel supplies. Hydroelectric plants (supplying about 10 percent) come in many varieties but their fuel supply (water) typically provides at least partial availability absent a severe drought. Oil-fired plants (supplying a few percent) typically have enough fuel to run a few

days. Wind and solar (supplying a few percent) operate when the wind blows and the sun shines so their availability is intermittent. Natural gas units (supplying about 30 percent) typically can run less than an hour after a supply disruption.

On a normal day, none of this matters because fuel for all of these plants is abundant and the grid is designed to allow the most economical generators to run. But what happens when temperatures go to 105 or -25 degrees?

During the hottest days of summer, electricity demand skyrockets. Nuclear, coal, gas and solar typically meet this demand. Wind generation rarely produces above 10 percent of its capacity during hot days, making heavy reliance on wind in very hot areas problematic.

Similarly, on the coldest days, electricity demand is very high. Wind typically performs well on these days. However, residential demand for natural gas for heating may limit the amount of fuel available for natural gas generators. One of the most significant winter grid events in our area occurred during the polar vortex in January 2014. During that time, nearly 22 percent of generation capacity in the PJM Interconnection power grid was unavailable primarily because of mechanical or fuel-related issues.

One final item to consider is the ability of generators to operate during severe weather conditions. A recent reminder of this was Hurricane Florence causing multiple generators to shut down during the flooding events in the Carolinas.

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# Clean comfort and savings

By Carline Mitchell, *Director of Marketing and Member Services*

LOOKING for a better alternative to heat your home? Somerset Rural Electric is here to help keep you informed of the changing landscape in heating and cooling technology. Just like many things change, such as home designs, so do heating options. Somerset REC has a fully staffed heating and cooling department to answer all of your questions and concerns.

Past heating technology continues to work; however, the industry continues to strive to make improvements and find better ways to provide higher energy efficiencies to enhance your comfort and conveniences. We want you, our members, to get the most out of every penny you spend on a kilowatt-hour without sacrificing comfort and reliability.

Managing the temperature in your home 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 56 percent of their home energy costs on heating and cooling their homes. While this outlay can be trimmed by tweaking efficiency, some folks have taken it a step further and installed a geothermal heating and cooling system.

For over three decades, Somerset REC has been an advocate of geothermal technology. There are more than



COZY AND COMFORTABLE: Ken and Deb Neimiller are looking forward to cutting less wood during extreme weather conditions.

400 cooperative members enjoying savings on their heating and cooling costs and receiving the benefit of a clean and convenient heating system. Geothermal remains the top choice for efficiency and comfort.

## From air source to ground source

Cooperative members Ken and Deb Neimiller will be added to the list of members enjoying the benefit, including economic savings and comfort, by

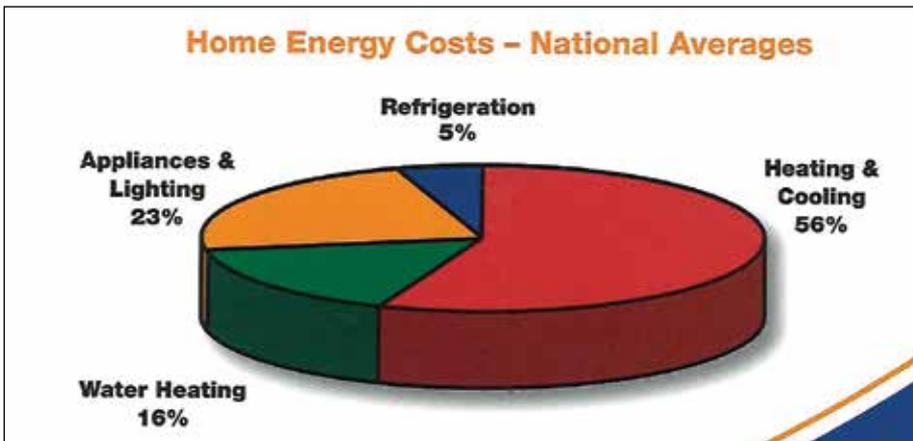
installing a geothermal system at their existing home in Black Township.

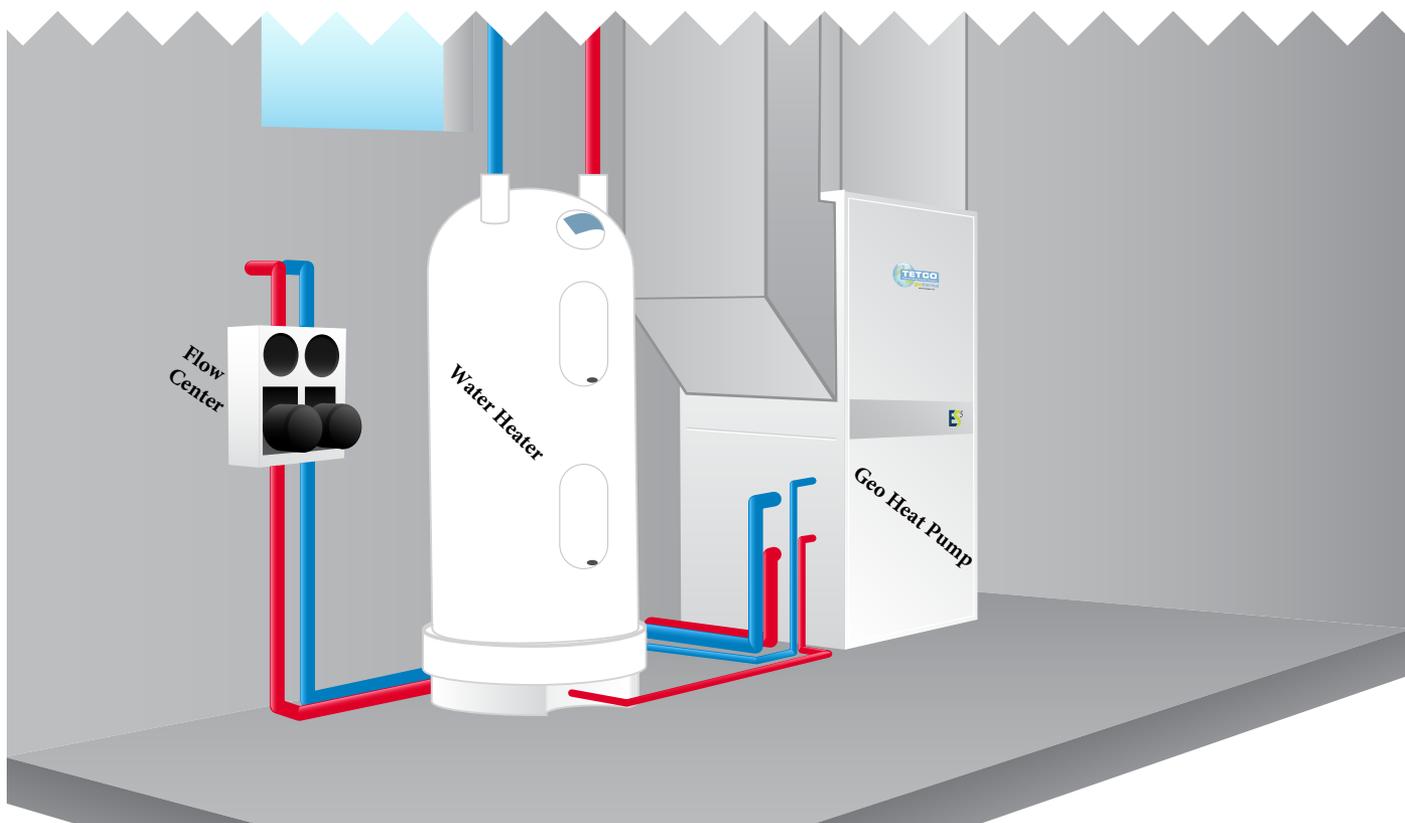
The Neimillers built their retirement home in 2009. Ken, a Somerset County native, was looking forward to returning to rural Somerset County after working in Washington, D.C., for many years. Ken's wife, Deb, is not local to the area and proclaims, "I am a city girl." Moving to rural America was a lifestyle adjustment for Deb, who was used to more populous areas her entire life.

Deb wanted central air-conditioning, so the Neimillers chose an air-source heat pump with electric strip backup to heat and cool their new home. The air-source heat pump worked well to provide the proper cooling needed; however, the heating cycle of the heat pump only worked efficiently at temperatures above 25 degrees.

"We supplemented the air-source heat pump with an outdoor wood furnace for the extreme cold temperatures. There is a lot of wood on the farm, so why not utilize it?" Ken says.

The Neimillers have been retired for almost 10 years and Ken says, "Look-





**GEOTHERMAL SYSTEM OVERVIEW:** Left: A flow center circulates the water from the outside loop field through the heat pump. Middle: A domestic hot water heater is plumbed into the heat pump. The excess heat is transferred to the domestic water heater through a heat exchanger. Right: A heat pump extracts heat from or dispenses heat into the loop field, depending on heating or cooling season.

ing forward to the next 10 years, we wanted to make sure we had something we could depend on without having to cut wood.”

They considered all options, but Ken says emphatically, “We didn’t want an open flame of any kind inside the house.”

Deb echoes that thought, saying, “Oil and gas can be dirty.”

“My parents had geothermal in their home and were always very satisfied,” Ken notes. “Geothermal made the most sense for us moving forward, especially with the 30 percent tax credit being offered.”

Geothermal has no open flame. Unlike their air-source heat pump that pulls heat from the air, the geothermal heat pump maintains stable temperatures year-round, pulling 50

to 55 degree water from the earth. As a result, the ground remains warmer than cold winter air. Somerset REC’s heating and cooling division designs geothermal units for indoor temperature at 70 degrees Fahrenheit while the outside temperature can drop to -10 degrees Fahrenheit, relying solely on the geothermal unit.

Ken and Deb called Tony Retassie from the cooperative’s heating and cooling division to review the options.

Tony says, “Their home was very well insulated. With the existing duct work in place, we didn’t need to make any adjustments to the inside of the home.”

The new geothermal system was sized accordingly, and it was simply a matter of removing the air-source heat pumps, installing the new geothermal system in the basement and tying it into the existing ductwork.

The geothermal system works in reverse during the summer months. Since ground temperatures are colder than warm summer air, geothermal units are super-efficient at cooling your home. An added benefit is the ability to tie the geothermal system into your

domestic water heater and use the geothermal to pre-heat your water. It was a win-win situation for the Neimillers. Ken doesn’t need to cut firewood if he doesn’t want to, and Deb will stay cool in the summer.

### Is geothermal for you?

If you are looking for the ultimate in energy efficiency to heat your home, it may be time to make a switch.

Geothermal systems offer one of the most energy-efficient and environmentally friendly ways to heat and cool your home, whether it’s an existing home, or new construction.

Give Somerset REC a call and let us help you with your options. What better time than now to take advantage of the federal tax credit, which is a 30 percent credit covering the entire cost of installing a geothermal heating system through 2019. This credit will easily put a dent in the installation cost. ☀



# Co-op education

EMPLOYEES from the Somerset Rural Electric Cooperative recently visited the Eaton Power Systems Experience Center in Pittsburgh, Pa., to broaden their knowledge of electrical power quality and safety. Linemen often use terms such as cutouts, reclosers, voltage regulators, fault indicators, and more when describing what caused an outage or finding a problem within the line. By attending this hands-on, full-scale facility, staff members were able to watch live demonstrations and scenarios as if they were the ones restoring the outage. At this center, visitors walk through the beginning stages of where electricity is generated, how it gets conveyed throughout the power lines and substations, all the way down to a receptacle in your home that you plug your television into. The ability to stand within feet of the equipment and experience an outage from start to finish was very educational to our staff and will aid in better communication to our members when reporting an outage or problem.

Co-op employee Kristi Burkett says, "I've learned more in two hours than I did in the many years I've worked at the co-op."

If you would like more information about the Experience Center or would like to take a virtual tour, please visit [videos.eaton.com/experience](https://videos.eaton.com/experience). 



EXPERIENCE CENTER: From left, Kristi Burkett, Zack Pritts, Tony Retassie, Emily Baer, Ken Walker, Roger Shroyer, Tawnya Zorn and Jonathan Hillegas get a bird's-eye view of problems a lineman can experience.

## From the General Manager

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With all of this in mind, what can we do to avoid these issues? The most important factor is very simple — diversity. Our current generation mix includes a wide range of capabilities that allow some units to fill in while others deal with fuel or weather limitations. Policies that diminish the ability of any segment to be included in our generation mix hurt us all by putting too many eggs into one basket.

I hope this series of articles provides some insight for you but, as always, if you have thoughts or questions on this or anything else, please stop by or give me a call. 

## Small Business Saturday – Saturday, November 24

When shopping this holiday season, consider supporting businesses within your community and "Shop Small!" As the eighth anniversary of Small Business Saturday approaches, the Saturday after Thanksgiving provides a time for those coming in to visit family and friends for the holidays to shop locally and support their hometown roots.



Here are a few reasons to promote local retailers:

- ▶ Small businesses give back (more) to your community
- ▶ Small businesses make a major economic impact
- ▶ Small businesses provide better customer service
- ▶ Small businesses provide greater access to product diversity
- ▶ Small businesses create a sense of community
- ▶ You're going to feel good about shopping locally

## It's time for an HVAC checkup

EVERY fall before it gets too chilly outside, call a qualified heating and air conditioning technician to give your central heating system a once-over.

In fact, it's important to have your heating system professionally maintained every fall.

Regularly maintaining your heating system will help prevent a breakdown on a cold night during the dead of winter.

Between annual checkups, you can head off trouble by paying attention to your heating system. Here's how:

- ▶ Replace your system's air filters once every three months. Dirty filters can get clogged and prevent air from flowing through them. That will make your system work harder, which is energy inefficient.
- ▶ When you turn the heat on for the first time this fall, listen for banging, rattling or other unusual sounds. They could be a symptom of a malfunction-in-the-making. Call your tech back to check it.
- ▶ If your windows are steaming up or you see rust or a lot of dirt on your heating vents, something is wrong. A professional can diagnose the problem.
- ▶ And if some rooms in your home feel cold, while others are comfortable, that's a sign that something's not quite right. Call for help.