

Currents

Your Link to Sussex Rural Electric Cooperative



High Voltage. . .



Members Ask Electric Thermal Storage (ETS) Heating

By Tom Tate

Electric Thermal Storage (ETS) heating systems have been in use for decades. These systems have high density ceramic brick cores interlaced with electric heating elements. The utility controls the flow of power to these elements on a set schedule, turning off the power during peak demand and restoring it during off peak hours. When the elements are not controlled, they store heat in the cores which retain that heat for hours or days. During a control period, small fans and pumps circulate air or water through the core and extract heat to keep the home at the desired temperature.

Your cooperative controls the heating elements Monday - Friday from 7-11 a.m. and from 5-10 p.m. during the heating season. A member recently asked me why we don't control every day of the week. His thought was that when we don't control, the ETS units are free to run at any time and could be wasting energy. I could see his logic and was at a loss for an answer so I contacted our manufacturer, Steffes.

The bottom line is that the ETS systems are quite thrifty when it comes to energy consumption. The Steffes units have a sophisticated control capability that looks at your room temperature and at your desired temperature. It then looks at the core temperature and if it determines it needs more heat to maintain the temperature, it turns on the elements to recharge the core. The units make this calculation every 15 minutes.

So, doesn't this methodology waste

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Commentary by the President & CEO



Smart Grid

by Jim Siglin
President & CEO

You may have heard the term, Smart Grid, in the news of late. Part of the ongoing discussion about the future of energy in America includes the implementation of this concept. GE, IBM and numerous other companies are touting their solutions for the Smart Grid and promising to deliver on its benefits. What is the Smart Grid and what does it mean for you, the end user?

First, a definition. If you plug the following search phrase into Bing, "smart grid definition," you get 825,000 results. Some of the definitions are from Wikipedia, the US Department of Energy, GE, American Superconductor and others. Grid Vision 2030 calls for the construction of a 21st century electric

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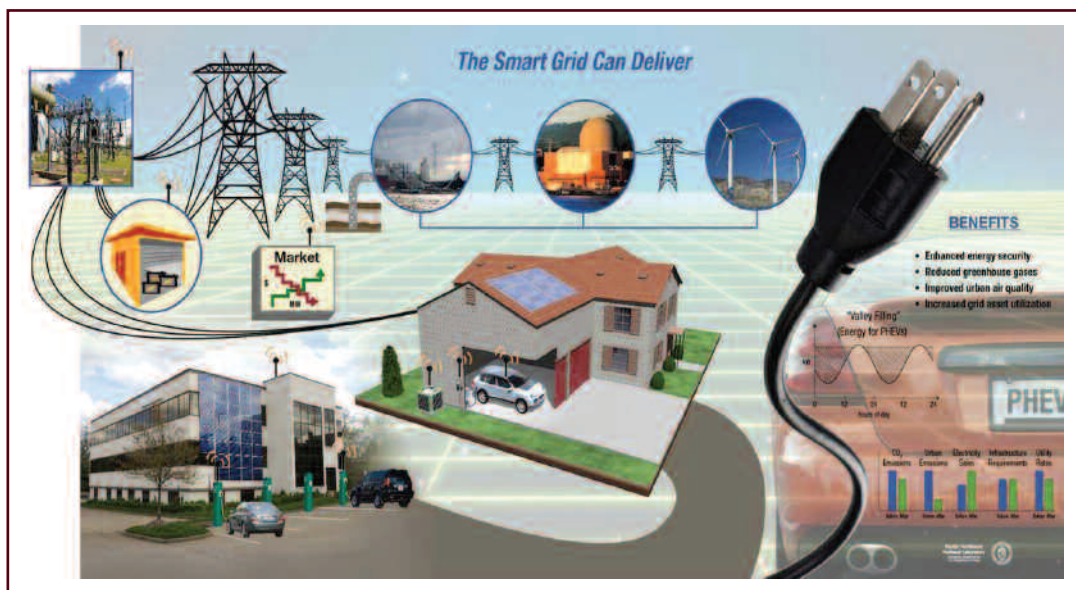
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system that connects everyone to abundant, affordable, clean, efficient and reliable electric power anytime, anywhere. We can achieve this through a smart grid, which would integrate advanced functions into the nation's electric grid to enhance reliability, efficiency, and security and would also contribute to the climate change strategic goal of reducing carbon emissions. These advancements will be achieved by modernizing the electric grid with information-age technologies such as microprocessors, communications, advanced computing, and information technologies. These enhancements will have the following characteristics or performance features:

- Self-healing from power disturbance events.
- Enabling active participation by consumers in demand response.
- Operating resiliently against physical and cyber attack.
- Providing power quality for 21st century needs.
- Accommodating all generation and storage options.
- Enabling new products, services, and markets.
- Optimizing assets and operating efficiently.

For more detail go to <http://www.oe.energy.gov/smartgrid.htm>.

What will the Smart Grid mean for you, the consumer? Looking at the definition, it will *continued on page 4*



Your Cooperative's Offerings...

Emergency & Standby Generators

Protect your property and your loved ones with an Onan-Cummins generator from SREC Resources. Available in portable and permanent configurations, we can tailor a solution to meet your needs and your budget. Our Onan-Cummins line is one of the best and most reliable in the business and our pricing is very competitive.

Have a need for a larger commercial generator? Let us give you a solution. Sizes up to 1 MW are available and rates may apply to help you save money with peak shaving.



GenerLink – Connect your Generator the Safe & Easy Way

A typical generator connection means installing a transfer switch and a sub panel. Expensive and inflexible. What if you want to power something not on the sub panel? No way that's happening.



Solve the problem with the GenerLink. This meter-based device makes connection a breeze and allows you full flexibility in what you power – up to the rated capacity of your generator. Need to run a freezer for a while and the generator is at capacity? Flip a breaker on a load you can do without for a while and connect the freezer.

Amperage	Standard	w/Surge Protection	Labor
30	\$660	\$775	\$160
40	\$780	\$870	\$160

Whole House Surge Suppression

Winter storms, lightning strikes, automobile accidents, animals, equipment failure. What do these things have in common? They all can create surges in our lines that can damage appliances and electronics in homes.

Homeowner insurance can cover these losses but why not protect yourself from such incidents to begin with? A whole house surge protector when used with strip devices and proper home grounding gives you the best possible protection.



Easy to install, the TESCO surge protector mounts right behind your meter and provides the first line of defense against surges entering your home by the electric line. Limit your risk today!

Load Control Program

While on the topic of water heaters, consider adding a load control device to that new Marathon. We install the

device before the Marathon leaves our warehouse. Once connected, you receive a one time bill credit and join over 1500 members who help us control our energy costs.

These devices have been on our system for over 20 years. When demand for electricity is high, we control power to the water heater and avoid the purchase of expensive energy. You benefit by lower rates all year.

Already have an electric water heater? Let us install a device and you'll receive a small bill credit for your participation. And, if you have a central air conditioner, we can offer an ongoing credit for your participation.

We designed the program so you never notice it working and there is no cost to you to join.

Marathon Electric Water Heaters

One of the largest users of energy in your home is your water heater. When that heater is part of your furnace it means you run your furnace in warm months just for hot water.

Save money and rest your furnace with a Marathon water heater. Up to 94% efficient and guaranteed for life against leaks. The perfect tank for our area and the last water heater you'll ever need.



Save with

Electric Thermal Storage (ETS) Heat

You read this correctly – save with electric heat. Not too long ago that statement would have generated snickers if not outright laughter. Today, with fossil fuel prices showing wide fluctuation and high prices, electricity is once again the way to heat your home.

ETS works this way. Bricks contained in well insulated housings are heating during off-peak hours when we can sell our electricity for a much lower rate. When our cost of power increases at times of peak demand, we turn off the power to the heating elements and small fans and pumps circulate air or water over the hot bricks.



You heat your home for less and enjoy greater comfort than with traditional systems.

In use in our area for more than 20 years, the time is right to rethink electric heat.

We'll size the system according to the heating needs of your home and arrange for professional installation. Or, you can don your contractor cap and we'll provide you with the details needed to complete the project.

Security Lights

There is one thing to be said about life in a rural environment, it's dark at night. This is preferred by most but there are those who like to see what is going on around their house at night or want a safer driveway or parking area. Then there are those who just like to light up their home for all to see. Whether for landscaping or security reasons, we



offer lights to meet your needs: area, landscape and architectural. For a set monthly fee, we install and maintain the lights. You get the illumination, we take care of the rest.

Worried that these lights waste energy? We are looking at high efficiency alternatives. Ask us for more detail.



e-Bill and Bank Drafts

Why pay bills the old-fashioned way? You know, write a check, stuff an envelope, get it to the post office and wait. Let us simplify your life in at least this area – use our on-line bill payment options. The process is easy, wend your way to our website and under the "Your Bill" heading click to get started.

You can select from the option of having the bill drafted monthly from your checking account, just like insurance and other services do. Or you can elect to receive a notification and then make your payment.

Already using your bank to pay our bill? Please consider switching. Bank systems actually increase our cost of processing payments, something our system does not.

Ready to get started?

Please use the form to request more information. Fill it out and mail it in. Or, use one of these methods for faster service:

Generators & GenerLink

Phone: 973.875.1365 • Fax: 973.875.2394

e-Mail: creese@sussexrec.com

TESCO Surge, Marathon,

ETS & Load Control

Phone: 973.875.5101 • Fax: 973.875.4114

e-Mail: ttate@sussexrec.com

Security Lights

Phone: 973.875.5101 • Fax: 973.875.4114

e-Mail: dwilliams@sussexrec.com

e-Bill & Bank Draft

Phone: 973.875.5101 • Fax: 973.875.4114

e-Mail: dwilliams@sussexrec.com

Use this handy form to get more information...

Name: _____

Address: _____

City: _____ State: _____ Zip: _____

Tel.: _____ Best time to call: _____

e-mail: _____

Contact us today for more information

Sussex Rural Electric Cooperative • 64 Route 639 • P.O. Box 346 • Sussex, NJ 07461
973.875.5101 or go to our website: <http://www.sussexrec.com>

I Would Like More Information On:

(check all that apply)

- Emergency & Standby Generators
- GenerLink – Connect your Generator the Safe & Easy Way
- Whole House Surge Suppression
- Marathon Electric Water Heaters
- Load Control Program
- Save with Electric Thermal Storage (ETS) Heat
- Security Lights
- e-Bill and Bank Drafts



Keep Your Weather Eye Open

by Barbara Taylor

Somehow all of those radar maps, computer predictions and meteorologists' insights lull me into thinking I know what to expect weather-wise.

But still there are the times when I'm caught in a downpour without an umbrella. Or when the wood is stacked and the refrigerator is packed in anticipation of two feet of snow and a dusting arrives.

How accurate are the forecasts?

Do they miss often, or does it just seem like that because we only notice when they're wrong? Is anybody keeping score?

Actually, a lot of people are watching and methods for determining forecast accuracy vary from fairly simple to extremely complex. The World Weather Research Programme/Working Group on Numerical Experimentation supports a Joint Working Group on Forecast Verification Research. One of their simplest formulas is:

$$\text{Accuracy} = \frac{\text{hits} + \text{correct negatives}}{\text{total}}$$

However, when they try to account for every nuance of forecast accuracy, their formula becomes this:

$$\text{HSS} = \frac{\frac{1}{N} \sum_{i=1}^K n(F_i, O_i) - \frac{1}{N^2} \sum_{i=1}^K N(F_i)N(O_i)}{1 - \frac{1}{N^2} \sum_{i=1}^K N(F_i)N(O_i)}$$

How would anyone even know if they were cheating? (Just kidding.)

A simpler calculation can be found at www.forecastadvisor.com. They review six commonly used forecasts and come up with an accuracy rating of between 64% - 71% over the past year for Sussex, NJ. Topping the list is The Weather Channel, my personal favorite, especially since the announcer started giving "our local forecast" instead of "your local forecast." It makes me feel like he is right in my neighborhood, ha ha, not in Cobb County, Georgia.

If we use the grading scale at a local high school, the best of these weather forecasts rates an unimpressive C-. So, I'll continue to check my usual forecast favorites. But, when I'm looking just a couple of hours ahead, I think I just may check the current conditions in Pittsburgh. Sometimes, practical experience beats esoteric computer-aided calculations hands down.

For a final thought I'd like to quote the ultimate forecast, given in 1978 by Al Sleet, the Hippy Dippy Weatherman (aka George Carlin). "The weather will continue to change on and off for a long, long time." You can't beat that for accuracy.

Some years ago, a very wet gas station attendant filled my tank during an unexpected rainstorm. His words have stuck with me all these years: "Weather forecast? You wanna know what the weather is going to be like? Call up somebody in Pittsburg. Whatever it's doing there, it'll be doing it here in a couple of hours!!"

In my home over the last few years, the TV is on less while time on the computer increases. But one station that still gets viewed frequently is the Weather Channel. And when a storm is predicted, it then becomes necessary to check out the forecast on at least two local stations as well.

SAVINGS & PROTECTION

by Barbara Taylor

In our continuing effort to help our members make informed choices, previous Currents articles have discussed the proper use of surge protection devices. And other articles have demonstrated that "vampire loads" from TVs, computers and other appliances, even when they are turned off, can waste a fair amount of energy. Wouldn't it be great if there was something that could help in both of these areas?

We are pleased to report that, while browsing the shelves at the Highland General Store, we found a device that does just that: the Smart Strip Surge Protector. Manufactured by Coleman Cable, Inc. (\$40, <http://www.colemancable.com> and search for

Smart Strip), the Smart Strip controls the power to devices when they are not in use while it also provides surge protection.

For example, you can set your computer to be the control appliance, and then set the monitor, speakers, printer, etc. to be controlled appliances. When the computer is off or in sleep mode, the Smart Strip turns off the power to the other devices. Another use might be to set your TV as the control appliance, and your DVD player, game console and cable box as controlled appliances. (Of course, there would be that annoying delay as the cable box resets itself...) Additional outlets on the strip can be used to protect appliances that you do not want to turn off, such as a cordless phone.

Another device that provides similar surge

protection and savings is the Watt Stopper Isolé Power Strip with Personal Sensor (\$90, <http://www.wattstopper.com/products/details.html?id=74>). This device works a bit differently: a motion detection sensor turns off the power to devices when an area is unoccupied. It also has additional outlets on the strip to protect appliances that you do not want controlled.

For more information and links to related topics, check out "How can a surge protector save energy?" at <http://electronics.howstuffworks.com/energy-saving-surge-protector.htm/printable>. Now, aren't both of these solutions better than crawling behind and under furniture to cut a plain old power strip off and on? We think so.

SREC OBSERVED HOLIDAYS

Regular readers know that I enjoy passing along lists of unusual holidays that are observed in the good old USA. This time, I am listing the holidays Sussex Rural will observe in 2010. By observe I mean the office will be closed. Please feel free to keep this list handy. It will also be posted at the office and on the website in the Events section.

Holiday	Date	Day/Date Observed
New Year's Day	January 1, 2010	Friday
Presidents' Day	February 15	Monday
Good Friday	April 2	Friday
Memorial Day	May 31	Monday
Independence Day	July 4 And July 5th	Sunday Monday
Labor Day	September 6	Monday
Columbus Day	October 11	Monday
Veterans Day	November 11	Thursday
Thanksgiving Day	November 25	Thursday
Day after Thanksgiving	November 26	Friday
Christmas Eve	December 24	Friday
Christmas Day Observed	December 27	Monday
New Year's Day Observed	January 3, 2011	Monday

Smart Grid

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mean fewer or shorter outages and greater control over your energy use and its cost. The ultimate goal is to have maximum efficiency achieved all along the system from generation to consumption with the end user playing an active role in that process. To make this a reality, the participants will need information, and lots of it, in a format that is manageable and that makes sense.

Sussex REC already has a lot of the infrastructure in place to support Smart Grid activities. Our automatic meter reading system gives us detailed information on every member's energy use. Our system controls

already tell us the general locations of faults and enable us to route power around them to minimize outage duration. And our expanding load control system is the cornerstone of demand response. We are continuing to invest in technologies that make the system more reliable and responsive and are actively investigating ways to get energy consumption data in your hands so you can make the best informed energy decision possible.

For the smart grid in Sussex County, the future is already here, at least the foundation for it.

Members Ask...

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energy? No, it doesn't. Think of it as pre-purchasing heat for your home. The only time you are wasting energy is when your home or room is too hot for your tastes. That is wasting energy and you would resolve that by reducing the temperature at the thermostat, reducing the core temperature or installing controls to better balance heat within your home. In short, all the energy that goes into the core is eventually available for heating your home. This heat is available in two

forms. The active form where heat is distributed by fans or pumps is the most apparent. Then there is the passive form where heat radiates from the unit when fans and pumps are not running. Since all heat is discharged into your home in one area or another, you get every penny worth's of heat you pay for.

Have a question that's been bugging you? Contact us at info@sussexrec.com and let us put paid to your question.



YOUTH TOUR 2010

Has it already been a year? Get ready to submit your applications for the 2010 edition of the *National Rural Electric Cooperatives' Youth Tour*.

Youth Tour is a week of getting to know what our nation's capital is all about - from politics to history to culture, the Tour will give you a look at Washington, DC few others enjoy.

If you have an interest in history, government or politics, the Tour is right up your alley.

This year, the Tour will run from **June 13-18**. To be eligible for consideration, your parents or primary guardian must be a member of Sussex Rural Electric Cooperative and you must be a high school junior.

Contact your guidance office for all the details, go online to www.sussexrec.com and click on the Youth Programs Link on the left or contact us at SREC for the necessary forms and details. 973-875-5101.

Applications are due no later than **March 1, 2010** so don't delay!

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The power of human connections

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