South Dakota Electric

Your Touchstone Energy® Cooperative

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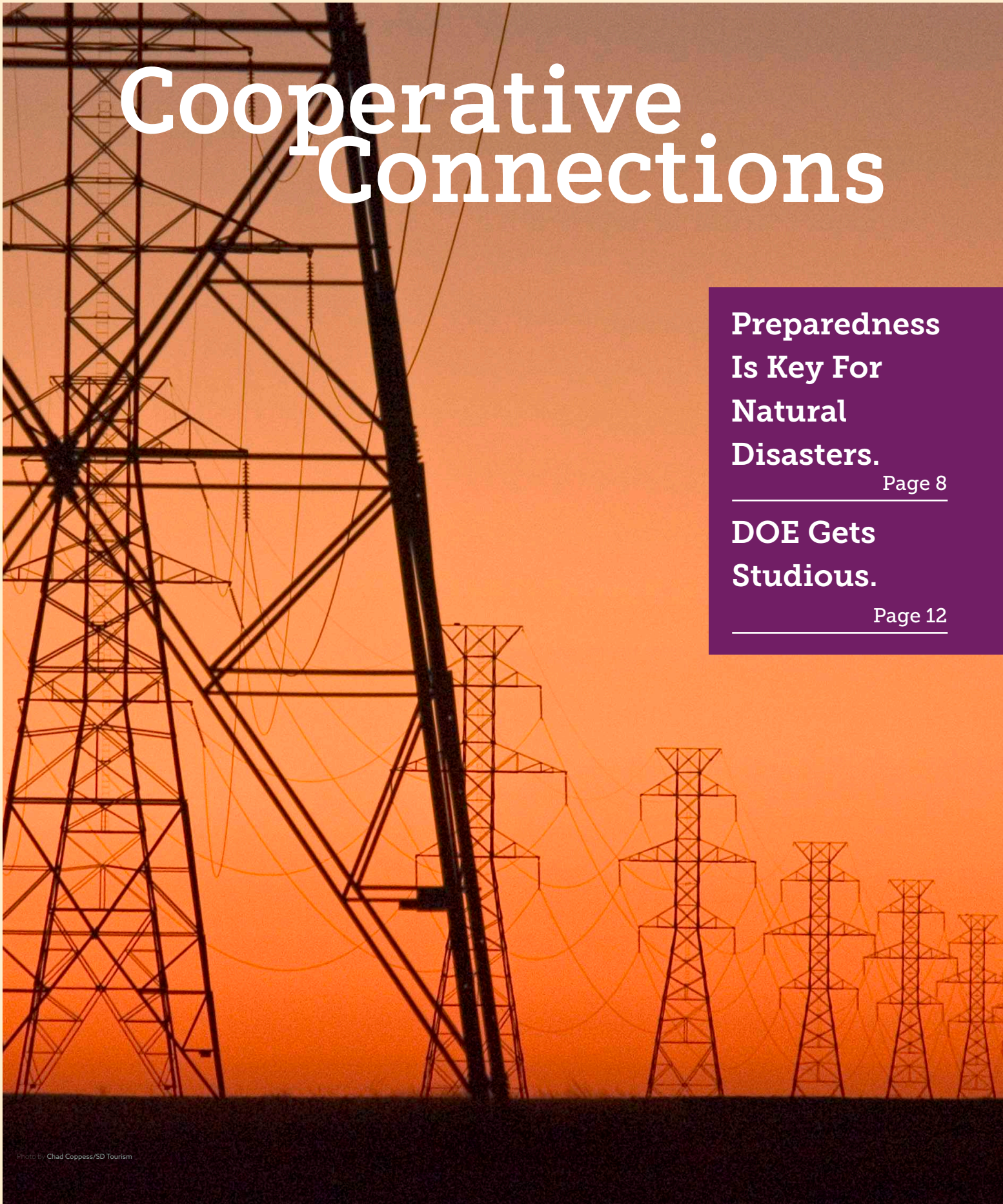

Cooperative Connections

Photo By Chad Coppess/SD Tourism

KEEPING THE LIGHTS ON ISN'T ENOUGH.

We're not your typical electric company, we're a local not-for-profit electric cooperative. We power our community with more than just electricity. Our employees give time and resources to help build a better community.

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BASIN ELECTRIC POWER COOPERATIVE
A Touchstone Energy® Cooperative

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South Dakota Electric Cooperative Connections

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Black Hills Electric, Custer, S.D.
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West River Electric, Wall, S.D
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Grassroots

Building on Cooperative Strength

Ed Anderson
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In the context of the electric co-op program, "Grassroots" is a powerful word. In fact, the historical success of the electric co-ops can be largely credited to that single word.

Grassroots has an electric co-op definition, one that reflects its importance in the industry. "Grassroots" refers to electric cooperative activists – directors, managers, employees and member-owners – who take an active role in the political process to protect their co-op from harmful legislation and regulation, as well as to promote the value of co-op ownership to their legislators.

Grassroots involvement can mean communicating with local, state and federal legislators on issues affecting electric cooperatives. It also can mean efforts by co-op supporters through the Action Committee for Rural Electrification® (ACRE®) to help candidates who want to protect electric cooperatives and co-ops' mission.

Electric cooperatives have cultivated a reputation on Capitol Hill as a "grassroots" organization. Legislators know that electric co-op member-owners actively get involved by writing, calling and e-mailing their legislators to have their voice heard in the political process. Grassroots advocates speaking with the same voice makes a difference on Capitol Hill.

Grassroots – the unified efforts and voices of the nation's electric co-op supporters – has proven to be the foundation of the industry's 75 years of success in serving electric co-ops, their owners and their communities.

Home Heating Safety Tips

There is something about the winter months and curling up with a good book by the fireplace. But did you know that heating equipment is one of the leading causes of home fire deaths? Half of home heating equipment fires are reported during the months of December, January and February. With a few simple safety tips and precautions, you can prevent most heating fires from happening.

- Keep anything that can burn at least three feet away from heating equipment, like the furnace, fireplace, wood stove or portable space heater.
- Have a three-foot "kid-free zone" around open fires and space heaters.
- Never use your oven to heat your home.
- Have a qualified professional install stationary space heating equipment, water heaters or central heating equipment according to the local codes and manufacturer's instructions.
- Have heating equipment and chimneys cleaned and inspected every year by a qualified professional.
- Remember to turn portable heaters off when leaving the room or going to bed.

- Always use the right kind of fuel, specified by the manufacturer, for fuel burning space heaters.
- Make sure the fireplace has a sturdy screen to stop sparks from flying into the room. Ashes should be cool before putting them in a metal container. Keep the container a safe distance away from your home.
- Test smoke alarms at least once a month.

Heating Equipment Smarts

- Install wood burning stoves following manufacturer's instructions or have a professional do the installation. All fuel-burning equipment should be vented to the outside to avoid carbon monoxide (CO) poisoning.
- Install and maintain CO alarms to avoid the risk of CO poisoning. If you smell gas in your gas heater, do not light the appliance. Leave the home immediately and call your local fire department or gas company.

Source: nfpa.org

Rural Infrastructure Issues

Rural America needs more than roads and bridges when it comes to infrastructure. The National Rural Electric Association is working to remind policymakers about the broader infrastructure needs of rural America and the importance of reliable power.

Electric co-ops have three major priorities when it comes to infrastructure:

- Any infrastructure package should recognize the need to maintain and enhance the rural electric grid, which powers 42 million Americans.
- Electric co-ops are also working to ensure more timely permitting decisions to expedite and reduce the costs of critical infrastructure projects. Regulatory review time lines for infrastructure can stretch on for years. These delays present reliability problems, strain existing infrastructure and can force electric co-ops to take drastic measures to keep the lights on.
- Rural broadband deployment also must be an infrastructure priority. Broadband access is limited across much of the nation's rural landscape but is a key ingredient to a healthy 21st century rural economy. Electric co-ops are working to expand rural broadband access and look forward to working with other stakeholders to close the digital divide.

KIDS CORNER SAFETY POSTER

"Stay away from broken power lines!"

Alaina Dekrey, 9 years old

Alaina is the daughter of Don and Cassandra Dekrey, Blunt, S.D. They are members of Oahe Electric Cooperative, Blunt.

Kids, send your drawing with an electrical safety tip to your local electric cooperative (address found on Page 3). If your poster is published, you'll receive a prize. All entries must include your name, age, mailing address and the names of your parents. Colored drawings are encouraged.

Kettle Creations

Chicken Rice Soup

- 1 T. oil
- 1 lb. boneless skinless chicken breasts
- 1 cup chopped onion
- 4-1/2 cups water
- 4 cups reduced-sodium chicken broth
- 1/2 tsp. minced garlic
- 1/4 tsp. thyme leaves
- 2 bay leaves
- 1/2 cup sliced carrots
- 1/2 cup sliced celery
- 1 package ZATARAIN'S® Yellow Rice

Heat oil in large saucepot or Dutch oven on medium-high heat. Add chicken; cook 3 minutes per side or until lightly browned. Remove chicken; set aside. Add onion to Dutch oven; cook and stir 3 minutes or until softened. Add water, chicken broth, garlic, thyme and bay leaves. Bring to boil. Add carrot, celery, Rice Mix and chicken. Reduce heat to low; simmer 10 minutes or until chicken is cooked through. Remove chicken; set aside to cool. Cover and simmer soup additional 20 minutes or until rice and vegetables are tender. Shred chicken and add to soup. Remove bay leaves before serving. Makes 10 (1 cup) Servings

Nutritional Information Per Serving: Calories 150, Total Fat 2g, Sodium 636mg, Cholesterol 27mg, Carbohydrates 27g, Protein 13g, Dietary Fiber 1g,

Pictured, Cooperative Connections

Beef and Barley Soup

- 3 lb. beef roast
- 32 oz. beef broth
- 1/2 cup diced celery
- 1/2 cup diced carrots
- 1 cup peeled and diced potatoes
- 1 cup water
- 1/8 tsp. thyme
- Salt and pepper (to taste)
- 1/2 cup barley (quick)

Combine roast, broth and veggies in crock pot and turn on High. In bowl, combine water, thyme, salt and pepper. Pour mixture over roast. After about 6 hours, remove roast from crock pot. Trim fat and shred beef. Place shredded beef back in crock pot. Add barley. You may add more water if desired. Cook an additional hour on High.

Note: If freezing, freeze before adding barley. Barley can be added after soup thaws.

Melanie Eichmann, Canistota

Shamrock Soup

- 6 celery ribs, chopped
- 4 medium carrots, sliced
- 2 cups cubed peeled potatoes
- 5 cups water
- 3 cups diced cooked corned beef
- 2 cups chopped cooked cabbage
- 1 tsp. dill weed
- 1 tsp. salt
- 1 tsp. seasoned salt
- 1/2 tsp. pepper

In a large stock pot, bring celery, carrots, potatoes and water to a boil. Reduce heat, cover and simmer until tender, about 20 minutes. Add remaining ingredients. Cover and simmer an additional 15 to 20 minutes.

Patricia Hopkins, Central City, NE

Potato-Sweet Pea Soup

- 3 lb. bag petite red potatoes, unpeeled and chopped into 1/2-inch to 3/4-inch pieces
- 1 small onion, chopped
- 1 cup chopped or shredded carrots
- 1 (13 oz.) bag frozen sweet garden peas
- 1 tsp. salt
- 1/2 tsp. pepper
- 1 tsp. Season-All seasoned salt
- 3/4 cup powdered coffee creamer
- 3 T. butter
- 1 (12 oz.) can evaporated milk
- 4 to 5 strips bacon, cooked and crumbled

Boil potatoes, onion and carrots until almost done; add peas and continue boiling until tender. Drain water, reserving 3 cups. Add remaining ingredients except bacon. Reheat to a boil; add bacon.

Frankie Hofer, Rapid City

Please send your favorite bread/breakfast or seafood recipes to your local electric cooperative (address found on Page 3). Each recipe printed will be entered into a drawing for a prize in June 2018. All entries must include your name, mailing address, telephone number and cooperative name.

Radiant Barriers:

Do they really make a difference?

Pat Keegan
Collaborative Efficiency

Dear Pat: I've heard that installing a radiant barrier in my attic could save me a lot of money on my energy bill. What exactly is a radiant barrier and does it really make a difference? – Don

Dear Don: A radiant barrier reflects radiant heat and can be used to keep heat in a home during the winter and to keep heat out in the summer. In order to understand the value of a radiant barrier, we need to consider the three different ways heat travels.

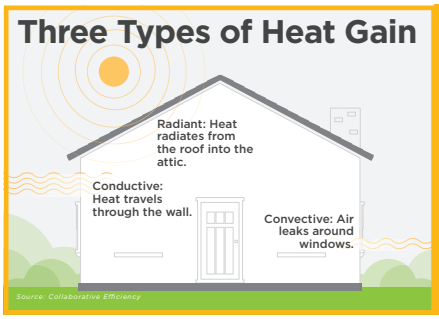
- Convection is air movement from hot to cold. This happens through openings in your home, like doors, windows, vents and air leaks.
- Conduction is heat traveling through a solid material, such as the sheetrock and framing of your home. This can be minimized by insulation.
- Radiant heat loss is a transfer of heat from the sun or when a warmer material transmits infrared radiation to a colder material. Radiant barriers are designed to reflect this type of heat loss.

Radiant barriers often look like aluminum foil. Sometimes the foil is fastened to oriented strand board or foam board, but the foil will only reflect radiant heat towards an air space of at least one inch. If the foil is in contact with a solid material, it conducts excess heat into that material.

A common location for application of radiant barriers is the attic; radiant energy from the sun is sent back out of the roof before it can heat the air and insulation in your home. It is commonly sold as a roll of shiny, aluminum material and is usually mounted on the underside of the framing that supports the roof.

The radiant barrier is only effective in reflecting radiant heat, not as insulation or as a wrap to block air loss.

The radiant barrier is only effective in reflecting radiant heat, not as insulation or as a wrap to block air loss, but it can be very effective at its intended purpose. Even something as thin as a sheet of aluminum foil can reflect 95 percent of the radiated heat back through the roof if it's installed properly, with an air gap between itself and the roof. While other solutions such as an attic fan try to remove the heat once it has accumulated, the radiant barrier stops the heat from building up in the first place.



Radiant barriers can only be effective at reflecting radiant heat.

The net impact of a radiant barrier depends on whether you live in a hot- or cold-weather climate. For example, homes that were retrofitted with attic radiant barrier systems in Florida were able to reduce air conditioning energy use by about 9 percent. In colder climates, the radiant barrier that reflects unwanted heat outside of the house in the summer will also be reflecting heat away from the house in the winter. In other words, the cooling bill may decrease but the heating bill may increase.

So, is a radiant barrier in your attic a good investment? Sometimes. You need to do a little research, as savings vary in each situation and there are many inaccurate claims made about the cost savings they bring. In a warmer climate, a home with a large cooling load and a roof that is fully exposed to the sun, an attic radiant barrier could be a cost-effective measure and it could make your home more comfortable. Products are getting better all the time, but even then, your expectations need to be realistic.

It's a good idea to compare an investment in an attic radiant barrier to other energy efficiency investments, such as improving your attic insulation or sealing air leaks around doors and windows. Of course, the best way to compare your energy efficiency opportunities is to schedule an energy audit of your home. Start by talking to your friendly energy advisors at your local electric cooperative.

This column was co-written by Pat Keegan and Brad Thiessen of Collaborative Efficiency. For more information on thermostats, please visit: www.collaborativeefficiency.com/energytips.

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REC Line Superintendents Recognized

Mitchell Tech Bestows Award

The Mitchell Technical Institute recognized the generosity of electric cooperative line superintendents when the school presented its Donor Legacy Award to the South Dakota Rural Electric Line Superintendents Association. The award is given annually to a donor who has consistently supported the MTI Foundation.

"Back in the mid-1990s, long before MTI had a Foundation or a single endowment, I received a phone call inviting me to lunch in Sioux Falls. The person calling identified himself as being a part of SDRE line superintendents and they wanted to talk about scholarships," said Julie Brookbank, MTI's Associate to the President.

"I traveled over to the meeting, really not know much about how to set up or manage a scholarship fund, but I was willing to listen and learn," said Brookbank. "That lunch appointment has resulted in a 20-year friendship with a group of individuals that I am proud to call friends of MTI and personal friends as well."

Brookbank noted that many of the SDRE line superintendents were graduates of MTI's program and were looking for a way to pay it forward. The scholarships were initially funded by the sale of a set of commissioned prints featuring rural electrification painted by Madison, S.D., artist John Greene.

"This is a highly active group. MTI assists with getting the students' applications, but the faithful group of superintendents travels to campus each spring to interview applicants and select the recipients, said Brookbank, noting that the first scholarships were awarded to MTI students in 1997.

To date, 113 scholarships totaling $82,750 have been given to future line workers. Many of these students have gone on to work for rural electric cooperatives. Two additional scholarships have been added to the Line Superintendents responsibilities. They now award the Mark and Kathy Hofer and Larry Brink Memorial scholarships in addition to their own awards each year.

MTI's Julie Brookbank, right, poses with SDRE Line Superintendent Association representatives Brian Bultje of Central Electric, Robert Ulmer from Bon Homme-Yankton Electric and Lynn Kruse from Dakota Energy who received the Donor award on behalf of the line superintendents association.

Under the Dome

South Dakota, Minnesota State Legislatures to Meet

South Dakota lawmakers head to Pierre this month for the start of the 93rd Legislative Session which convenes Tuesday, Jan. 9.

For more on the South Dakota legislature, go to http://sdlegislature.gov/

Contact information for South Dakota legislators can be found at the above website and also can be accessed through the South Dakota Legislative Roster published by South Dakota's electric cooperatives. The roster is published as an app for iPhones and iPads and also Droid devices. It can be found in Apple's App Store and also in Google Play.

Minnesota legislators return to St. Paul on Feb. 20 for the second half of that's state's biennial session.

The Minnesota legislature is comprised of 201 members: 67 senators and 134 representatives.

For more on the Minnesota legislature, go to https://www.leg.state.mn.us/

Every year, the U.S. is hit by many natural disasters, including snow and ice storms, tornadoes, hurricanes and wildfires. Before disaster strikes, familiarize yourself with the types of disasters that are common in your region.

PREPARING FOR DISASTER

Planning Ahead Can be Key For Your Family

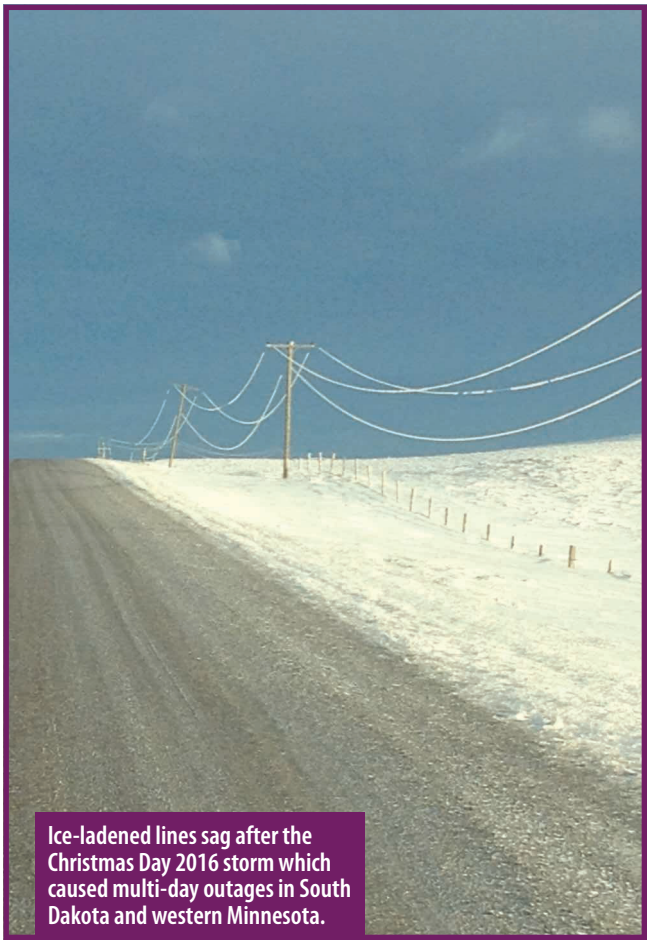
Thomas Kirk

Associate Analyst, NRECA

Every year, the U.S. is hit by many natural disasters, including snow and ice storms, tornadoes, hurricanes and wildfires. These types of disasters pose a significant threat to our communities and homes. The most important step you can take to keep you and your family safe is to prepare beforehand, but knowing what to do during and after the event is crucial as well.

Before disaster strikes, familiarize yourself with the types of disasters that are common in your region, especially if you're new to the area. Many of the specifics depend on what type of disaster you're expecting, but there are several general guidelines to keep in mind as you prepare:

- **Water:** You will need one gallon per person per day. If you assume your family of four may be stranded for a week, store a minimum of 28 gallons.
- **Food:** Stock up on non-perishable or long shelf-life items, such as wheat, soybeans, canned fruits, peanut butter, jelly and condensed soups.
- **First Aid Kit:** Make sure your kit includes adhesive bandages (assorted sizes), antiseptic wipes, aspirin, hydrocortisone ointment, scissors and a thermometer. For a full list of suggested items, visit www.redcross.org.
- **Flashlights and candles:** Be sure to keep extra batteries and matches (in a waterproof container) on hand.



Ice-ladened lines sag after the Christmas Day 2016 storm which caused multi-day outages in South Dakota and western Minnesota.

For additional guidance on emergency items to keep around the house, visit www.ready.gov/build-a-kit. Also consider training offered by local emergency management services such as Community Emergency Response Team (CERT) classes.

Some disasters occur suddenly, but many bring advance warnings, like hurricanes and winter storms. Pay special attention during the week leading up to the event for local and state government warnings and evacuation notices. Make sure every family member knows what your emergency plan is: staying or leaving, safe rooms in the house, where supplies are located, what to do if anyone is separated and how to notify loved ones that you're safe after the event. It's also a good idea to know where your home's main water and gas shutoff valves are located.

While the U.S. electric grid is reliable, it is possible to lose power during a storm. The outage could be momentary or last hours or even days. If you live in an area where loss of power after a storm could be dangerous, consider purchasing a backup generator for your home. These can cost anywhere from a few hundred to few thousand dollars, depending on your needs. Be sure to test the generator before the disaster to ensure it's operating properly.

If you don't have a backup generator and lose power, don't panic. Most power outages in the U.S. are short and will not last more than a few hours. However, without knowing in advance how long the outage will last, it's wise to assume and act as though it will last for days. Here are a few general tips for wise energy practices during a disaster:

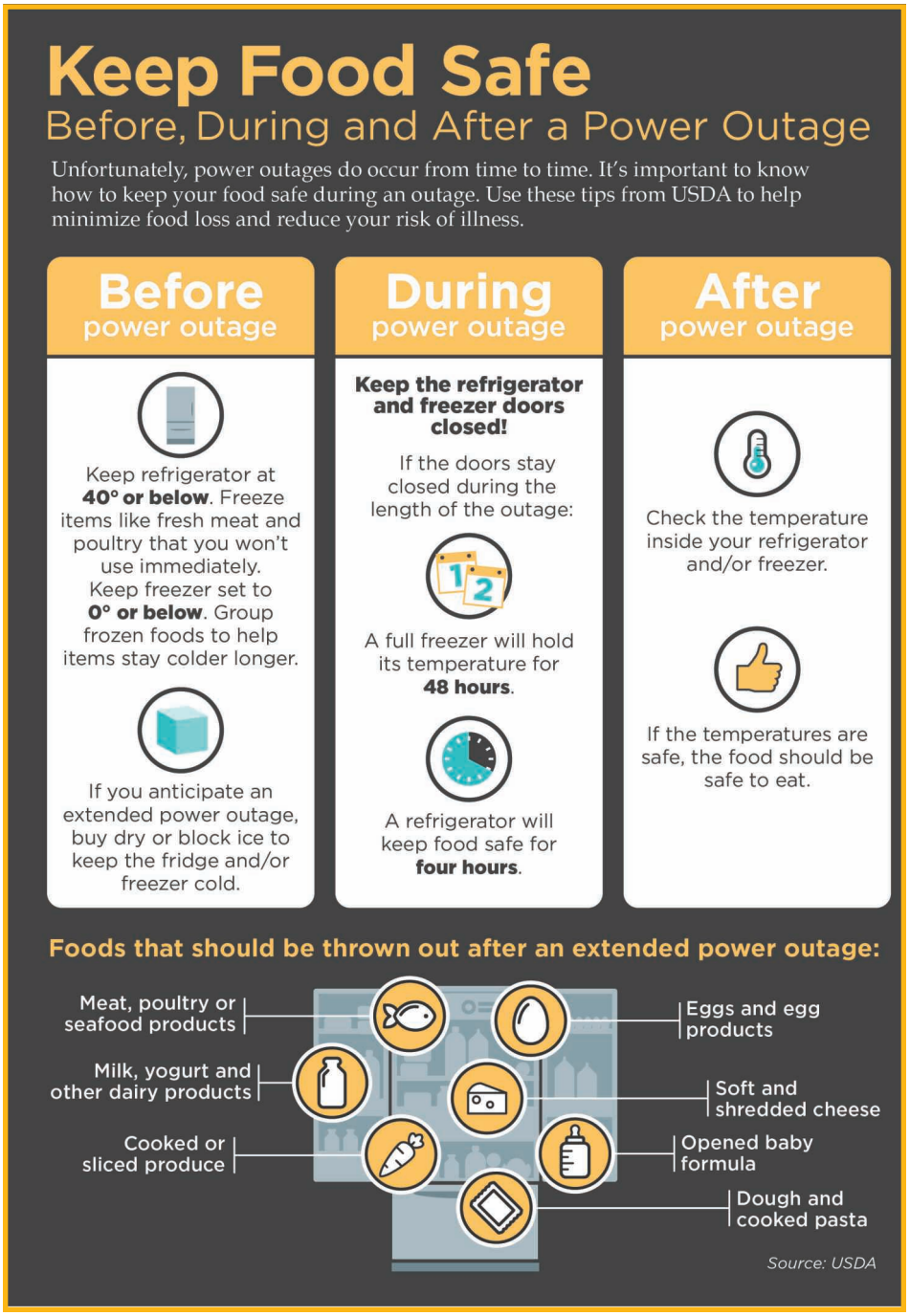
- Consume perishable and refrigerated foods first before they spoil.
- Pack frozen foods close together and consider freezing water bottles to eliminate any air pockets. The frozen water will help keep the food cooler longer.
- Make sure you have alternative lighting sources, like candles and flashlights (with spare batteries) located throughout the home.
- Keep manual tools such as a can opener on hand to replace any electronic gadgets you typically use.
- Similar to filling a bathtub with water before a storm, make sure that all cell phones are fully charged.
- If the disaster involves lightning, unplug all electronic devices to protect against a power surge.

After the storm, be cautious when leaving your home. Listen to government warnings and use common sense when approaching any damaged buildings or fallen trees. If you see a power line that is down, always assume the wires are live and dangerous. If possible, call your local electric cooperative to report the downed power line.

With a little bit of forethought, you're highly likely to make it through a disaster without too many problems. Remember, you and your family's safety should always come first.

For more information on disaster preparedness, visit www.ready.gov.

Thomas Kirk is an associate analyst of distributed energy resources for the Arlington, Va.-based National Rural Electric Cooperative Association's Business & Technology Strategies (BTS) division.



Recent months have seen a steady decline in the price of LED bulbs for residential consumers.

BUDGET-FRIENDLY

Efficiency Upgrades for your Home

Thomas Kirk

There are two ways to measure energy efficiency improvements. The first is the payback period. This is the amount of time that the improvement will pay for itself. The second is comfort. Improvements can often increase the comfort level of a home. This is not easy to measure, but is one of the driving forces behind home-weatherization efforts. There are several areas of the home that can be improved easily, without breaking your budget.

Lighting

Recent months have seen a steady decline in the price of LED bulbs for residential consumers. 60W LED lamps can be purchased at many box retailers for $5 or less, and some are selling on Amazon.com for as little as $2! LEDs should save 60 percent or more compared to incandescent bulbs and last for several years. Care should be taken when selecting a bulb for a fixture that uses a dimmer as not all dimmers will work with LEDs.

Heating and air conditioning

The Energy Information Agency estimates that heating and air conditioning account for 22 percent of a typical home's annual electric bill. Options such as an air source heat pump or a ground source heat pump can be 20 to 45 percent more efficient than the existing heating or cooling system in the average home. However, the upfront cost is often a barrier to adoption.

Simple solutions such as changing air filters at least every 3 months (more often would be better!) will increase airflow to rooms, increase the life of the HVAC unit's motor and

improve the air quality of the home. Sealing and insulting ductwork can be done in a weekend and results in energy savings of up to 20 percent.

To lessen the amount of work that heating and cooling systems need to do, it is important to find and seal air leaks. To find leaks, walk around your house on a cold day and feel for drafts around exterior doors and windows, electric outlets and entrance points for TV and telephone cables. In basements, target dryer vents, gas lines or any place with an opening in the wall. To seal leaks, apply caulk, spray foam or weather stripping to these areas.

Simple acts such as cooking outdoors on a hot summer day or keeping curtains closed to keep out summer sun will keep the interior of your home cooler and reduce the amount of time AC units need to operate.

Appliances and electronics

The appliances and gadgets that make life easier are also the largest users of electricity in our homes. When buying a new appliance, look for the ENERGY STAR® label. That simple act can result in 10 to 15 percent savings in energy consumption.

Some states have adopted ENERGY STAR® holidays where sales tax is waived on the purchase of qualifying ENERGY STAR®-rated appliances.

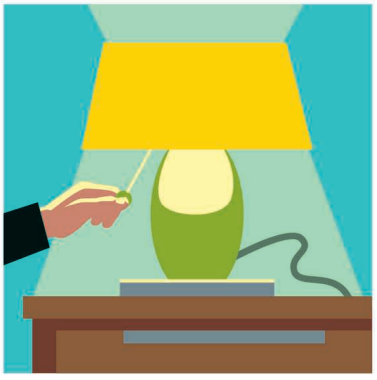
The best energy efficiency improvements are often the easiest.

Simple household tips include:

- Cleaning lint traps on dryers and not over drying clothes will save energy and extend the life of your clothes.
- Replacing worn refrigerator gasket doors will stop cool air from leaking from the refrigerator.
- Clean refrigerator coils and keep refrigerators away from heat generating appliances such as an oven.
- Home electronics, like computers, TVs, DVD players and other modern devices, consume power even when turned off. This is known as a parasitic load or by the more playful term "energy vampire." According to a study conducted by the Lawrence Berkeley National Laboratory, the average home loses 8 percent of its monthly energy consumption to these energy vampires. A full 75 percent of the power used to run home electronics is consumed when those appliances are turned off, according to the U.S. Department of Energy. Cutting off power by using a power strip or a smart strip is the best way to stop this senseless loss of energy.
- The best energy efficiency improvements are often the easiest. Turning lights off when leaving a room, sealing windows and doors and cleaning refrigerator coils isn't as much fun as buying a shiny new appliance. But these simple tasks are proven ways to save energy and increase comfort on a budget.

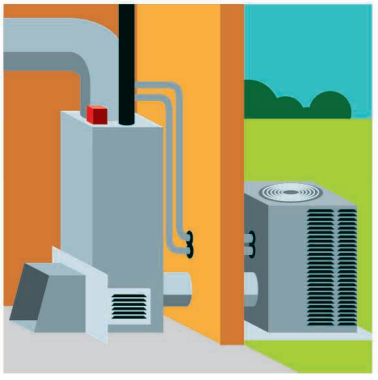
Thomas Kirk is an associate analyst of distributed energy resources for the Arlington, Va.-based National Rural Electric Cooperative Association's Business & Technology Strategies (BTS) division.

BUDGET-FRIENDLY EFFICIENCY TIPS



Lighting:

LED bulbs save 60 percent or more energy than incandescent bulbs and can now be purchased at box retailers for $5 or less.



Heating and Cooling:

Replace air filters every one to three months and seal/insulate ductwork to maximize the efficiency of your home's heating and cooling system.

Appliances & Electronics:

Keep appliances and electronics free from lint and dust, and use a power strip to turn off electronics when not in use, avoiding "energy vampires."

The Encyclopedia of Modern Electricity

DOE study describes how coal plants and solar cells can share the same power lines – and more.

By Paul Wesslund

NRECA

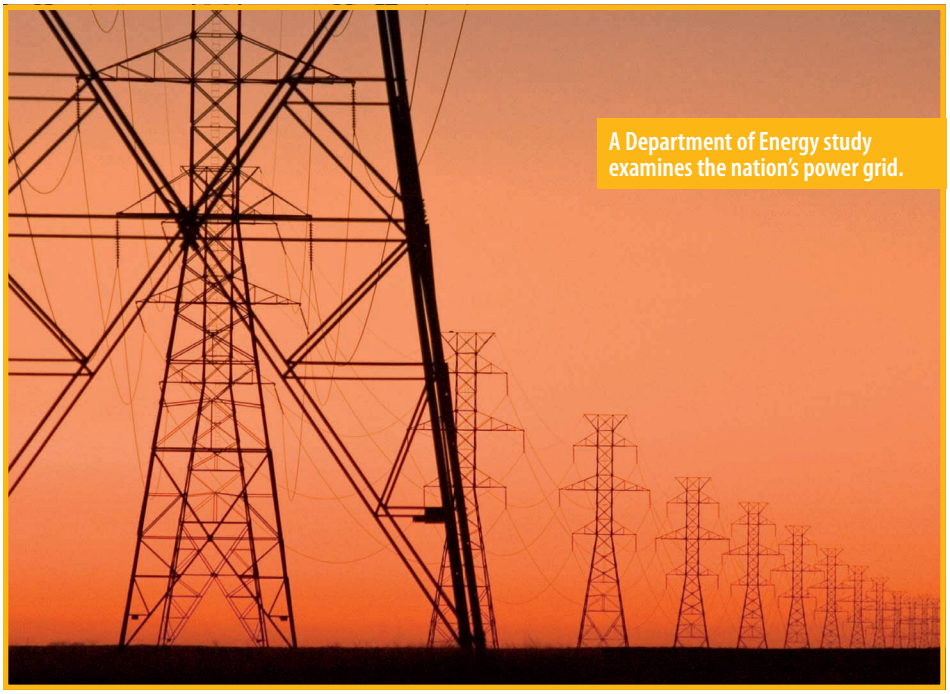
Coal-fired power plants are closing. Homeowners with rooftop solar panels are selling unused electricity back to their utility. Windfarms are springing up across the Great Plains. Fracking and other drilling techniques have cut the cost of natural gas by more than half since 2002 and doubled the amount of electricity generated by natural gas.

What does all this mean for the nation's network of wires and power plants otherwise known as the electric grid? The answer lies within a new report from the U.S. Department of Energy, says Pam Silberstein, senior director of power supply for the National Rural Electric Cooperative Association.

"It's incredibly well-written, well-researched, very thorough, very comprehensive," says Silberstein. "It's a well put-together compilation of the state of the grid."

The study is a quick turnaround response to an April 14 memo from Department of Energy Secretary Rick Perry

DOE's August 2017 Staff Report to the Secretary on Electric Markets and Reliability describes the complex state of the electric grid and goes into great detail on how utility trends might affect the price and availability of electricity. It highlights the importance of retraining coal and nuclear power workers and the effects that renewable energy has on the stability and reliability of the existing electric utility system.



A Department of Energy study examines the nation's power grid.

Better reliability

Another way to describe the report: If someone decided that every high school student should understand how the nation's system of electric wires and power plants works, this study would make a good textbook.

Silberstein sees the grid study as a report that puts in one place all the changes affecting utilities and what those changes might mean. She says, "We're asking our utility systems to meet a lot of demands they haven't been asked to do before."

The study is a quick-turnaround response to an April 14 memo from Energy Secretary Rick Perry to DOE's chief of staff to "explore critical issues central to protecting the long-term reliability of the electric grid."

Plenty has changed for electric utilities over the past 20 years and this DOE study describes that new landscape with enough detail to satisfy the most hard-core energy nerd:

- About 15 percent of the nation's power plants have been retired since 2002, mainly coal and nuclear plants. That trend is expected to continue due to low natural gas prices, slower growth in demand for electricity, environmental regulations and more solar and wind power. While new generating

capacity from sources including natural gas and renewable energy has amounted to about three times the plant retirements, that radical change in the energy mix requires new ways of managing the flow of electricity from the power plants where it is made, to the homes and businesses where it is used.

- People are demanding better reliability in their electricity; enough that utilities have supplemented their goals of reliability with a new term, "resilience." Basically that means being able to get the lights back on faster after a natural disaster. That has utilities experimenting with things like utility-scale storage batteries and more precise targeting of which customers should get power restored first.
- A lot of states are passing Renewable Portfolio Standards that mandate levels of green energy, creating a patchwork of requirements in the national grid.
- New and growing additions to the electric grid are changing the way it needs to be managed. Those new power sources include rooftop solar panels that sell electricity back to the utility, natural gas plants that require new pipelines, solar and wind farms in remote areas that need to be connected with new transmission lines and "demand response programs" in which utilities can turn off home water heaters and air conditioners for short periods during times of peak demand.

Recommendations from the study include:

- Updating the pricing arrangements that govern the buying and selling of electricity.
- Improving disaster preparedness.
- Reviewing regulations that limit the growth of power generation, especially for coal, nuclear, and hydroelectricity.
- Focusing on workforce development as energy workers face a changing energy marketplace.
- Modernizing the software that manages electricity transmission.
- Coordinating with Canada and Mexico to enhance electric reliability across all of North America.

The study also notes the importance of cybersecurity to the electric grid, but said that would be addressed in an upcoming joint report from the Department of Energy and the Department of Homeland Security.

Paul Wesslund writes on cooperative issues for the National Rural Electric Cooperative Association, the Arlington, Va.-based service arm of the nation's 900-plus consumer-owned, not-for-profit electric cooperatives.

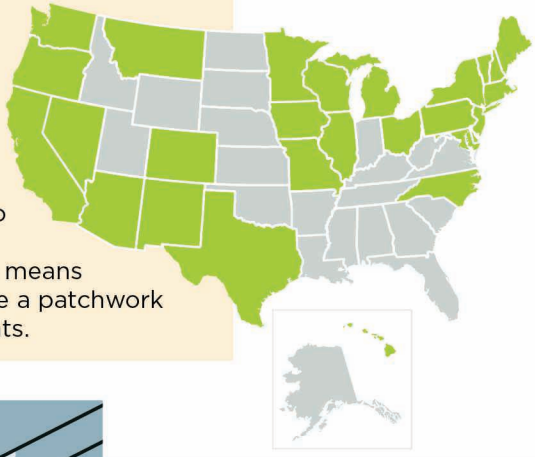
THE EVER-CHANGING ELECTRIC GRID

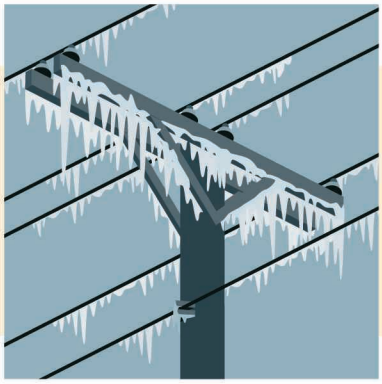
A recent DOE report on the nation's electric grid tells the story of an extreme makeover that is impacting the price and availability of electricity. Let's take a look at some of those changes and how they impact utilities:

Less Coal and Nuclear:
About 15 percent of the nation's power plants have been retired since 2002, while new generating capacity from sources like natural gas and renewable energy has amounted to about three times the plant retirements. This radical change to our energy mix means utilities must find new ways to manage the flow of electricity.

More Renewables:
Over the last year, renewable energy generation increased from 7 percent to 10 percent. These new and growing additions to the electric grid are changing the way it needs to be managed.

Green States:
29 states and the District of Columbia have adopted Renewable Portfolio Standards, which require a certain amount of electricity to be produced from renewable energy. This means utilities have to manage a patchwork of different requirements.





Storm Recovery:
People want electricity all the time. In addition to reliability, utilities are exploring a goal of resilience, which means faster recovery and restoration after major storms and natural disasters.

SOURCE: DEPARTMENT OF ENERGY (DOE)

Turning your thermostat back can save you money.

WAYS TO SAVE ENERGY THIS WINTER

U.S. Department of Energy

https://energy.gov/energysaver/fall-and-winter-energy-saving-tips

The strategies below will help you save energy, save money, and stay comfortable during the cold winter months. Some of the tips below are free and can be used on a daily basis to increase your savings; others are simple and inexpensive actions you can take to ensure maximum savings through the winter.

If you haven't already, conduct an energy audit to find out where you can save the most, and consider making a larger investment for long-term energy savings.

Take Advantage of Heat from the Sun

- Open curtains on your south-facing windows during the day to allow sunlight to naturally heat your home, and close them at night to reduce the chill you may feel from cold windows.

Cover Drafty Windows

- Use a heavy-duty, clear plastic sheet on a frame or tape clear plastic film to the inside of your window frames during the cold winter months. Make sure the plastic is sealed tightly to the frame to help reduce infiltration.
- Install tight-fitting, insulating drapes or shades on windows that feel drafty after weatherizing.
- Find out about other window treatments and coverings that can improve energy efficiency.

Adjust the Temperature

- When you are home and awake, set your thermostat as low as is comfortable.
- When you are asleep or out of the house, turn your thermostat back 10° to 15° for eight hours and save around 10 percent a year on your heating and cooling bills. A smart or programmable thermostat can make it easy to set back your temperature.
- If you have a heat pump, maintain a moderate setting or use a programmable thermostat specially designed for use with heat pumps.

Find and Seal Leaks

- Seal the air leaks around utility cut-throughs for pipes ("plumbing penetrations"), gaps around chimneys and recessed lights in insulated ceilings, and unfinished spaces behind cupboards and closets.

- Find out how to detect air leaks.
- Learn more about air sealing new and existing homes.
- Add caulk or weatherstripping to seal air leaks around leaky doors and windows.
- Find out how to select and apply the appropriate caulk and weatherstripping.

Maintain Your Heating Systems

- Schedule service for your heating system.
- **Furnaces and heat pumps:** Replace your filter once a month or as needed. Find out more about maintaining furnaces or boilers and heat pumps.
- **Wood- and Pellet-Burning Heaters:** Clean the flue vent regularly and clean the inside of the appliance with a wire brush periodically to ensure that your home is heated efficiently. Find other maintenance recommendations for wood- and pellet-burning appliances.

Reduce Heat Loss from the Fireplace

- Keep your fireplace damper closed unless a fire is burning. Keeping the damper open is like keeping a window wide open during the winter; it allows warm air to go right up the chimney.
- When you use the fireplace, reduce heat loss by opening dampers in the bottom of the firebox (if provided) or open the nearest window slightly – approximately 1 inch – and close doors leading into the room. Lower the thermostat setting to between 50° and 55°F.
- If you never use your fireplace, plug and seal the chimney flue.
- If you do use the fireplace, install tempered glass doors and a heat-air exchange system that blows warmed air back into the room.
- Check the seal on the fireplace flue damper and make it as snug as possible.
- Purchase grates made of C-shaped metal tubes to draw cool room air into the fireplace and circulate warm air back into the room.
- Add caulking around the fireplace hearth. Find out more techniques to improve your fireplace or wood-burning appliance's efficiency. Learn tips for safe and efficient fireplace installation and wood burning.

Lower Your Water Heating Costs

Turn down the temperature of your water heater to the warm setting (120°F). You'll not only save energy, you'll avoid scalding your hands.

5 Ways to Save Energy this Winter

Energy efficiency projects to reduce winter bills at home add up to good dollars and cents, and the payoffs continue throughout the year. Here are five tips to jumpstart energy savings:

1 BUTTON UP

Caulk, weather stripping and insulation help seal gaps, keeping heated air in.

2 SWITCH OFF

Power strips are ideal for spaces tied to occasional use. Electronics in workshops, craft nooks, game rooms, home offices and guestrooms are great for a one-touch switch off power strip.

3 CHECK THE OVER/UNDER

One of your best bets for saving is a full ductwork inspection under floors and over ceilings. Collapsed connections, tears, animal damage and register gaps can leak conditioned air into unused spaces.

4 LEAD WITH LEDS

The more use a kitchen gets, the greater the potential savings with new generation LEDs. Replacing every bulb with new generation bulbs is a bright idea for winter that will also keep your cooking space cooler in summer.

5 LEGACY LOSERS

More than 60 million refrigerators in the U.S. are at least 10 years old, costing consumers more than $4 billion a year in energy expenses. Replacing that old family-sized fridge with a smaller EnergyStar model will save money for years to come.

Source: U.S. Dept. of Energy

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ABERDEEN, SD

December 15-March 31
South Dakota snowmobile trails season, Lead, SD, 605-584-3896

December 23
Skates and a Movie, Rapid City, SD, 605-716-7979

December 31
Make-A-Wish New Year's Eve Dance, Ramkota Hotel and Convention Center, Aberdeen, SD, 605-370-4588

December 31
HOT 93.1 Downtown Countdown, Rapid City, SD, 605-716-7979

January 6
Cyanotype Photography Process, Spearfish, SD, 605-642-7973

January 11-13
Ice Fishing Tournament and Expo, Mobridge, SD, 605-845-2500

January 12-13
Red Dirt Festival, Deadwood, SD, 605-559-0386

January 13
Christmas with the Animals, Sioux Falls, SD, 605-367-7003

January 17-25
Winter Art Show, Spearfish, SD, 605-642-7973

January 19
Portland Cello Project Concert, Spearfish, SD, 605-642-7973

January 19-20
Media One Funski, Sioux Falls, SD, 605-339-0000

January 19-20
ISOC Deadwood SnoCross Showdown, Deadwood, SD, 605-578-1876

January 9
South Dakota Legislature Convenes, Pierre, SD
February 20
Minnesota Legislature Convenes, St. Paul, MN

Photo by Chad Coppess/SD Tourism

January 20
Bark Beetle Blues, Custer, SD, 605-440-1405

January 21
REO Speedwagon, Deadwood, SD, 605-559-0386

January 26-February 4
Annual Black Hills Stock Show and Rodeo, Rapid City, SD, 605-355-3861

January 27
Sioux Empire on Tap, Sioux Falls, SD, 605-367-7288

February 3
Tomahawk Snow Jam, Deadwood, SD, 605-569-2871

February 6-10
Winter Farm Show, Watertown, SD, 605-886-5814

February 9-10
Mardi Gras Weekend, Main Street, Deadwood, SD, 605-578-1876

February 15-17
Sno Jam Comedy Festival, Sioux Falls, SD, siouxfallssno-jamcomedyfest@gmail.com

February 16-18
2018 National Pheasant Fest and Quail Classic, Sioux Falls, SD, 651-209-4933

February 16-18
Annual Frost Fest, Brookings, SD, 605-692-6125

February 24
Snow Jam, Lead, SD, 605-569-2871

February 24
Annual Outhouse Races and Chili Cook-off Contest, Nemo, SD, 605-578-2708

March 3-6
2018 Summit League Basketball Championship, Sioux Falls, SD, 605-367-7288

March 10-11
2018 Gun Show, American Legion Hall, Saturday 9 a.m. to 5 p.m., Sunday 9 a.m. to 3 p.m. MST, Philip, SD, 605-859-2280 or 605-441-8466

March 16-17
28 Below Fatbike Race, Lead, SD, 605-584-3435

March 16-17, 23-24
60th Annual Schmeckfest, Freeman, SD, 605-925-4237

March 17
Annual Ag Day at the Washington Pavilion, Sioux Falls, SD, 605-367-6000

March 27
Socks in the Frying Pan Concert, Spearfish, SD, 605-642-7973

March 31
Eggstravaganza, Rapid City, SD, 605-716-7979

To have your event listed on this page, send complete information, including date, event, place and contact to your local electric cooperative. Include your name, address and daytime telephone number. Information must be submitted at least eight weeks prior to your event. Please call ahead to confirm date, time and location of event.