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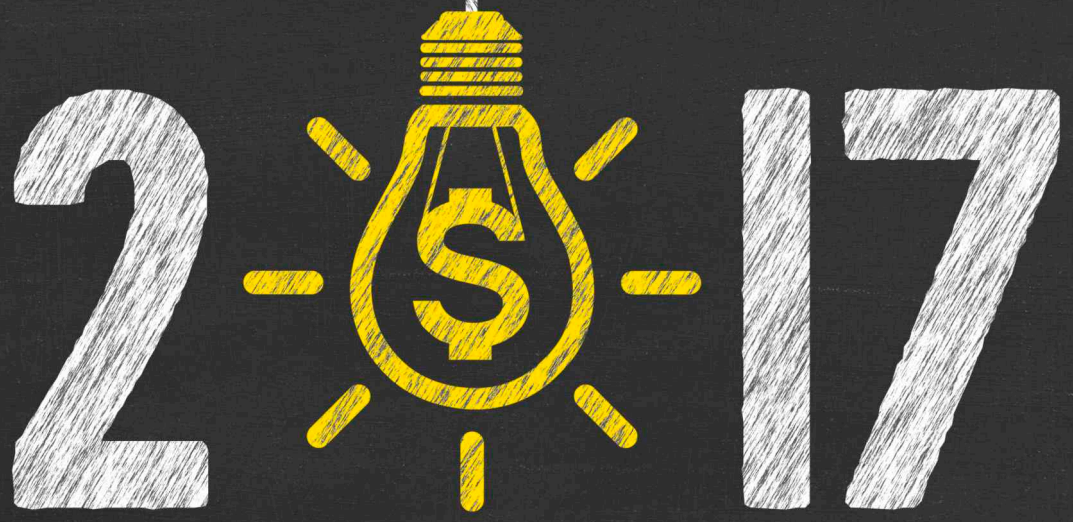
Cooperative Connections

JANUARY 2017 VOL. 69 NO. 1



Resolutions To Help You Save

P8-9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South Dakota Electric Cooperative Connections

ISSN No. 1067-4977

Produced by the following electric cooperatives in South Dakota and western Minnesota:

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Butte Electric, Newell, S.D.
Cam Wal Electric, Selby, S.D.
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West Central Electric, Murdo, S.D.
West River Electric, Wall, S.D
Whetstone Valley Electric, Milbank, S.D.
City of Elk Point, S.D.

South Dakota Electric Cooperative Connections is published monthly for $6 annually for member cooperatives, $12 annually for non-members by South Dakota Rural Electric Association, 222 W. Pleasant Drive, Pierre, S.D. 57501. Correspondence to: Editor, *South Dakota Electric Cooperative Connections*, PO Box 1138, Pierre, SD 57501; telephone (605) 224-8823; fax (605) 224-4430; e-mail editor@sdrea.coop

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Editorial

New Year, New Faces in Political Arenas

Ed Anderson
General Manager, South Dakota Rural Electric Association

With the new year comes many changes for our state and country in the political arena.

In early January, South Dakota's 92nd Legislature will convene, bringing with it one of the larger group of new lawmakers we've seen in a while. Some of the faces are veteran lawmakers who had stepped away from the process for a time, others are new to the Capitol. We look forward to working with each of them as we have done for the past 75 years.

Yes, it has been 75 years since the South Dakota Rural Electric Association was formed. In those early days, co-op pioneers fought to establish legislation that would allow for the formation of the cooperative business model in the electric field. Those early leaders knew that the progress that would be ushered in with rural electrification was essential to our state. It still is.

Co-ops would work hard in those early days fighting for a single piece of legislation. It would take until Feb. 26, 1947, for Gov. George T. Mikkelson to sign the South Dakota Electric Cooperative Act which paved the way for power line construction.

In the decades since then electric cooperatives have continued to work hard to make sure that lawmakers hear the concerns of the 337,000 South Dakotans who receive power from one of the state's 28 distribution cooperatives and three generation and transmission cooperatives.

Later in January, a new administration will be inaugurated in Washington, D.C. On a national level our cooperatives are represented by the National Rural Electric Cooperative Association in Arlington, Va. Also, established in 1942, NRECA works tirelessly to represent the 42 million Americans who are members of their local electric cooperatives.

Changes on both these levels will bring challenges and opportunities. If the latest election taught us anything I hope that it served as a wake-up call that if you take it seriously, being an informed and participating voter in our country is not easy. I'm convinced that social media preys on the lazy and gullible, and mainstream media is more concerned about making news than reporting it. There is so much "noise" bombarding us every day that you really have to want the truth and be willing to search for it if you want to make informed decisions. And it is certainly just my opinion but in my mind a system that asks voters to bear the responsibility for understanding and acting on a complicated and far reaching 34-page piece of legislation (Initiated Measure 22) in a voting booth is a system begging for bad laws and even more disgruntled and disillusioned voters.

Being an informed and participating voter in our country is not easy. For that I am both concerned and thankful. It was never meant to be easy. We just need more voters who are willing to do the work.

Carbon Monoxide Alarm Safety Tips

Carbon monoxide (CO) is a poisonous gas that is created when common fuels such as natural gas, oil, wood or coal burn incompletely. This odorless, colorless, tasteless gas is often called the "silent killer" because it is virtually undetectable without the use of detection technology like a CO alarm.

Installation Tips:

• Install CO alarms on every level of your home and outside each sleeping area.

• Interconnected CO alarms provide the best protection. When one sounds, they all sound.

• CO alarms are not a substitute for smoke alarms. Install both types of alarms in your home.

• Purchase CO alarms from a reputable retailer that you trust.

• Choose alarms that bear the label of a nationally recognized testing laboratory.

• Follow the manufacturer's instructions regarding proper placement and installation height.

Maintenance Tips:

• Test CO alarms at least once a month by pressing the TEST button.

• CO alarm batteries should be replaced in accordance with the manufacturer's instructions, at least once a year. If an alarm "chirps" or "beeps" to indicate low batteries, they should be replaced immediately.

• The lifespan of CO alarms varies. CO alarms should be replaced in accordance with the manufacturer's instructions.

Alarm Tips:

• Make sure that everyone in your family knows the difference between the sound of the CO and smoke alarms, and what number to call for a CO emergency.

• If your CO alarm sounds, immediately move to fresh air outside. Alert others In the home to the danger and make sure everyone gets to fresh air safely.

• Never ignore a sounding CO alarm.

Source: esfi.org

Kids' Corner Safety Poster

"Always use water on your fire."

Braden Aukes

Braden was in first-grade when he submitted this safety poster. He is the son of Brian Aukes, Beaver Creek, Minn. He is a member of Sioux Valley Energy, Colman, S.D.

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.

Reader **Recipes**

Super Soups

Cheeseburger Soup

1/2 lb. ground beef
3/4 cup chopped onion
3/4 cup shredded carrots
3/4 cup diced celery
1 tsp. dried basil
1 tsp. dried parsley flakes
4 T. butter or margarine, divided
3 cups chicken broth
3 cups diced, peeled potatoes
1/4 cup all-purpose flour
2 cups cubed processed American cheese
1-1/2 cups milk
3/4 tsp. salt
1/4 to 1/2 tsp. pepper
1/4 cup sour cream

In a 3-quart saucepan, brown beef; drain and set aside. In the same saucepan, sauté onion, carrots, celery, basil and parsley in 1 T. butter until vegetables are tender, about 10 minutes. Add broth, potatoes and beef; bring to a boil. Reduce heat; cover and simmer for 10 to 12 minutes or until potatoes are tender. Meanwhile, in a small skillet, melt remaining butter. Add flour; cook and stir for 3 to 5 minutes or until bubbly. Add to soup; bring to a boil. Cook and stir for 2 minutes. Reduce heat to low. Add cheese, milk, salt and pepper; cook and stir until cheese melts. Remove from the heat; blend in sour cream. Yield: 8 servings

Nancy Noess, Mitchell

Butternut Squash Bisque

1 T. canola oil
1 T. unsalted butter
1/2 cup diced onion
3/4 cup diced carrots
3 cups vegetable broth
4 cups peeled and cubed butternut squash
Salt and pepper to taste
1/2 cup heavy cream, optional
Ground nutmeg to taste

Heat oil and melt butter in a large pot over medium heat. Cook and stir onion until tender. Mix carrots and squash into pot. Pour in vegetable broth and season with salt, pepper and nutmeg. Bring to a boil; reduce heat and simmer until vegetables are tender. In a blender or food processor, puree soup mixture until smooth. Return to pot; stir in heavy cream. Heat through but do not boil. Serve warm with a dash of nutmeg. Yield: 4 servings

Debra Weaver, Box Elder

Super Easy Potato Soup

8 oz. cream cheese, cut into small pieces
1 can cream of chicken soup
32 oz. chicken broth
2 lb. hash browns
1/3 cup chopped onion
Diced bacon or ham, as desired
Salt and pepper to taste

Mix together all ingredients in a slow cooker. Cook on LOW for 7 hours. May add diced green or red peppers and carrots for color.

Amy Schoenfelder, Cavour

Cream of Crab Soup

1/4 cup (1/2 stick) butter
1 medium onion, coarsely chopped (1 cup)
1/3 cup flour
1 T. OLD BAY® Seasoning
1/2 tsp. McCormick® Parsley Flakes
4 cups milk or half-and-half
1 lb. lump crab meat
3 T. dry sherry

Melt butter in 3-quart saucepan on medium heat. Add onion; cook and stir 5 minutes or until softened. Add flour, Old Bay and parsley; whisk until well blended. Whisking constantly, gradually add milk. Bring to boil, stirring occasionally. Stir in crab meat. Reduce heat to low; simmer 20 minutes, stirring occasionally. Stir in sherry. Heat 1 to 2 minutes. Sprinkle with additional Old Bay, if desired. Yield: 6 servings

Nutritional Information Per Serving: Calories 285, Total Fat 14g, Cholesterol 119mg, Sodium 605mg, Carbohydrates 16g, Dietary Fiber 1g, Protein 22g

Pictured, Cooperative Connections

Mushroom Salsa Chili

1 lb. ground beef
1 lb. bulk pork sausage
2 (16 oz. each) cans kidney beans, rinsed and drained
1 (24 oz.) jar chunky salsa
1 (14.5 oz.) can diced tomatoes, undrained
1 large onion, chopped
1 (8 oz.) can tomato sauce
1 (4 oz.) can mushroom stems and pieces, drained
1/2 cup each chopped green pepper, sweet red and yellow pepper
1/2 tsp. dried oregano
1/4 tsp. garlic powder
1/8 tsp. thyme
1/8 tsp. dried marjoram

Cook beef and sausage over medium heat until meat is no longer pink; drain. Transfer meat to a 5-quart slow cooker. Stir in the remaining ingredients. Cover and cook on low for 8 to 9 hours or until vegetables are tender.

Stephanie Fossum, Hudson

Santa Fe Cheese Soup

1 (15 oz.) can whole kernel corn, drained
1 (15 oz.) can pinto beans, rinsed and drained
1 (14 oz.) can chicken broth
1 (10 oz.) can diced tomatoes and green chilies, undrained
1 (4 oz.) can premium chuck white chicken, drained
1 (4 oz.) can chopped green chilies, if desired
1 lb. processed American cheese, cubed

In a 3-quart saucepan or slow cooker, combine all ingredients. Cook and stir until cheese is melted. Garnish with crushed tortilla chips. If using a slow cooker, cook on LOW for 2 to 3 hours, stirring occasionally. Note: May serve with a dollop of sour cream in each bowl.

Patricia Hopkins, Central City, NE

Please send your favorite brunch and 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 2017. All entries must include your name, mailing address, telephone number and cooperative name.

Smartphone Energy Apps:
Can They Really Save You Money?

Patrick Keegan
Collaborative Efficiency

Dear Pat: I'm interested in smartphone apps that will help track my energy use and provide tips for how to reduce it. Do you have any suggestions? – Peggy

Dear Peggy: There are several smartphone apps that can help you determine how energy is used in your home. Energy use apps can also provide information that helps you choose efficiency upgrades that make the most sense for your home.

Here are a few types of smartphone apps you could consider downloading:

- **Your electric co-op's app:** Many electric co-ops offer smartphone apps that allow you to view recent bills and set high-use alerts. Many of these apps will also let you pay your bill through the app, read about any co-op efficiency programs or incentives, compare your energy use to similar homes and learn how the weather may have impacted your energy bill. Visit your co-op's website to find out if they offer a smartphone app.
- **Smart thermostat apps:** There are a number of smart thermostats on the market from companies like Alarm.com, ecobee, Honeywell and Nest. Smart thermostats can optimize your home's heating and cooling based on your family's habits and the weather. If you have one of these smart thermostats, take advantage of the corresponding smartphone app that can give you detailed information about your home's heating and cooling use.
- **Energy disaggregation device apps:** There are some devices and corresponding smartphone apps from companies such as Bidgely and PlotWatt that analyze electric signals to determine how much electricity appliances are using in your home. With these devices and apps, you can see the energy use of a particular appliance over time. An unexplained jump in energy use could pinpoint a problem.
- **Apps with energy-savings tips:** Some apps provide personalized energy tips based on your location, home characteristics and other information that you provide. One example is Touchstone Energy®'s "Together We Save" app, which provides energy-savings tips for the home, as well as energy use calculators.

Additional apps that can help you track and understand your energy use are becoming available each day. Read reviews from other users to learn which apps have been most beneficial. Keep in mind that while these apps can give you an idea of how much energy you are using, which areas of your home are using the most energy and tips for reducing your use, it's up to you to evaluate the information the app provides. One thing to remember is that apps often only look at a single fuel use, so if you have an all-electric home, the app could be quite conclusive – but if you have appliances fueled by natural gas or propane, the information will be less thorough.

With trend data from an energy app, you should be able to pinpoint large energy uses in your home. For example, if heating and cooling are significant draws on your energy bills, investing in weatherization measures or upgrading your system to a more efficient one could have a big impact on your bill. Apps that give you access to real-time information can be a powerful diagnostic tool to help you evaluate the impact of an energy efficiency measure.

A good practice is to sit down regularly to look at trends and changes to your energy bills. Has your energy use increased in the last month? Was the weather significantly colder or warmer? Was your family at home more often because of a holiday? Does your co-op have time-of-use rates and if so, do you make any adjustments to your energy use to account for those different rates – for example, running your clothes dryer overnight instead of when you get home from work?

If your bill is increasing and you are not sure why, or you want more ideas for how to reduce your energy bills, your electric co-op is a great resource.

Your co-op's energy advisor may be able to sit down with you and analyze your bill, talk about your home's characteristics and your family's habits and provide tips for how to reduce your energy use.

This column was co-written by Pat Keegan and Amy Wheeless of Collaborative Efficiency. For more ideas on efficiency apps and how to save energy, please visit: www.collaborativeefficiency.com/energytips.

Basin Electric Named to Lists of Top Producing Cooperatives

Within the Energy and Communications category on the NCB (National Cooperative Bank) Co-op 100 list, Basin Electric earned the 19th position of the nation's top revenue-earning cooperative businesses.

Each year during Co-op Month in October, cooperatives share what sets the co-op business model apart. It's a foundation of service – service to co-op members and their communities. The impact of co-ops within the communities they serve and beyond is critical to the local, national and global economy.

This year, Basin Electric was named within two lists of top producing cooperatives – the NCB Co-op 100® and the 2016 World Cooperative Monitor.

Within the Energy & Communications category on the NCB (National Cooperative Bank) Co-op 100® list, Basin Electric earned the 19th position of the nation's top revenue-earning cooperative businesses with a reported $2.1 billion in revenue in 2015.

Globally, the 2016 World Cooperative Monitor included two electric cooperatives within its top 300 – Basin Electric at 215th, up 14 places from a year ago, and Oglethorpe Power Corp. in Georgia at 300th.

The 2016 World Cooperative Monitor was released in conjunction with the International Summit of Cooperatives, which was held Oct. 11-13, 2016, in Québec City, Canada.

"Basin Electric is humbled to once again achieve these rankings," said Paul Sukut, Basin Electric CEO and general manager. "The strength of our cooperative is our people. We stand 137 cooperatives and 2.9 million members strong. Without our members, there is no Basin Electric. Together we strengthen rural America by not only producing and delivering reliable electricity, but by fundamentally working to improve the lives of our member-consumers."

Universities Tackle Workforce Shortage Problem

An estimated 33,000 new jobs are expected to be created in South Dakota between 2012 and 2022, based on state labor department projections. The state's challenge is to supply an adequate pool of skilled workers to fill those positions. New data confirm a robust majority of students who graduate from South Dakota's six public universities remain in state after completing a degree, but that efforts must intensify to boost graduate production going forward.

Looking at the 2014 graduation cohort, the public universities retain about 72 percent of their home-grown graduates in state the year following college graduation, either to work or to pursue additional postsecondary education. For out-of-state students completing degrees at the same institutions, the percentage that remained was just over 29 percent.

"The supply of new jobs is growing and those new jobs will be increasingly knowledge based," said Mike Rush, the regents' executive director and CEO. "Public universities can and will play a critical role in meeting the state's skilled workforce needs." To address human capital demands across the state, Rush said the regents have adopted a statewide attainment goal of 65 percent of South Dakotans, ages 25 to 34, holding some type postsecondary credential by 2025.

Even as larger cohorts of students graduate from the public universities, Rush noted that the number of graduates placed in state has climbed steadily since 2006. Nearly 650 additional graduates were placed in 2013-14 in South Dakota, compared to the number placed eight years earlier.

The top-two industries where graduates found employment in South Dakota were health care (29.9 percent) and educational services (19.6 percent). Several of the highest-ranked employment sectors that South Dakota graduates entered also correspond to industries projected by the state labor department to be in high demand for employment through 2022.

The placement study examined data sets from the South Dakota Board of Regents, the South Dakota Department of Labor and Regulation and the National Student Clearinghouse to determine the extent to which public university degree completers were retained in state after graduation. The full study can be found online at: https://www.sdbor.edu/the-board/agendaitems/2014AgendaItems/2016-December/6_N_BOR1216.pdf.

Resolution to Save

Simple Steps to Saving on Your Energy Bill

Brenda Kleinjan

As the new year dawns, thousands of Americans will make resolutions. Resolutions to lose weight. Resolutions to exercise more. Resolutions to save money.

America's Touchstone Energy® Cooperatives offer key tips for reducing energy costs – and many are low- to no-cost solutions. And, some are easy to implement – and stick with throughout the year.

"In a home, heating, ventilation and cooling (HVAC) is the largest use of energy. Setting back your thermostat is the easiest and cheapest way to save energy," said Chad Reisenauer, a certified energy manager at Basin Electric Power Cooperative in Bismarck, N.D.

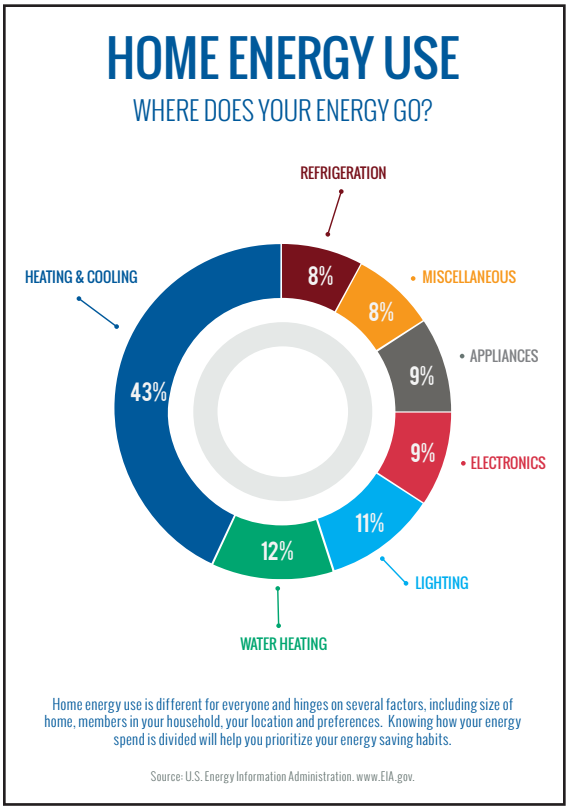
Here's the first 10 things to consider:

1. Replace any light bulb, especially ones that are on more than one hour per day, with a light-emitting diode (LED) bulb. Lighting accounts for about 11 percent a typical home's energy use, so savings here can add up.

2. Close shades and drapes during the day to help keep heat out in summer. Opening coverings on south-facing windows can allow for radiant heat to enter during winter months. Heating and cooling accounts for the largest use of energy in a home.

3. Plug electronic devices such as cable boxes, printers and TVs into power strips to turn off during vacations or long periods without use. Depending on your family, electronics can account for 8 percent to 15 percent of a home's electric bill.

4. Outside your home, caulk around all penetrations including telephone, electrical, cable, gas, water spigots, dryer vents, etc. Take the caulk gun inside, too. Caulking along baseboards with a clear sealant is recommended as



is caulking around plumbing penetrations that come through walls beteneath sinks.

5. Change HVAC air filters monthly. Make sure when changing the filters they are facing the correct direction. (Look for the arrow on the side of the filter.)

6. Use the dishwasher's air-dry cycle instead of the heat-dry cycle to dry dishes. The kitchen can account for 15 percent to 20 percent of your home's energy use.

7. Keep your garage door down. A warmer garage in the winter and cooler garage in the summer will save energy.

8. Set water heater temperature no higher than 120° F. Water heating can account for 12 percent of a home's energy use. For smaller households of one or two members, the temperature can be turned down to 115° F.

9. Make sure dryer vent hose is not kinked or clogged. Also be sure to clean the dryer's lint trap before each use and ensure that the dryer's outdoor exhaust door is not blocked or clogged.

10. Ensure refrigerator door seals are tight. Set the refrigerator temperature to 34° F. to 37° F. and the freezer temperature to between 0° F. and 5° F.

"Most of these are low-cost/no-cost measures," said Alan Shedd, a professional engineer and certified energy manager who is the director of energy solutions for the Touchstone Energy® Cooperatives brand. "While you can save more by sealing ductwork and air-sealing your house to reduce leaks, we don't want to discourage people from doing the simple things first."

"Check out the newly re-designed TogetherWeSave page on TouchstoneEnergy.coop. We've added an energy saving tips section that includes a Top-10 list. For a direct link use http://www.touchstoneenergy.com/energy-money-saving-tips/more-tips/ and click on the "Top 10.""

Inset above: Chad Reisenauer, a certified energy manager with Basin Electric Power Cooperative in Bismarck, N.D., takes measurements using a light meter at Wall Drug in Wall, S.D., as West River Electric Association's Veronica Kusser records the results. Another WREA team was counting each of the attraction's thousands of light bulbs as part of an energy audit to determine where energy savings could be found in the 85-year old tourist attraction.

Energy Savings Prescription Pays Off at Wall Drug

As the owners of iconic Wall Drug in Wall, S.D., prepared to celebrate their 85th year of operation, they turned to their local Touchstone Energy Cooperative, West River Electric Association, for an energy audit and a prescription to use electricity more wisely.

In January 2016, an energy audit of the facility was conducted. The sprawling complex which includes the street-level stores that are open to the public, also includes thousands of square feet of behind-the-scenes storage and offices that extend below and above the millions of visitors.

The audit accounted for the 5,400 light bulbs and more than 3,100 light fixtures throughout the attraction. It also looked at heating and cooling expenses associated with the facility as well as the efficiency of appliances and other electronics.

When all was said and done, the recommendations included some basic steps that are applicable in both homes and businesses.

The Hustead family – which owns Wall Drug – had already started converting much of the property to LED lighting. But, an important step behind-the-scenes had the potential to really add up in savings.

The audit recommended installing occupancy sensors – devices that sense when people enter and exit a room and adjust the lighting accordingly – was a major step in reducing costs.

Another major recommendation was that exterior doors be kept closed during summer months to keep cooler air inside the building.

On one meter alone (the attraction has several meters), energy consumption was significantly reduced by taking the recommended steps.

Find out more about energy-saving steps you can take by contacting the energy experts at your electric cooperative.

Strong and United

Basin Electric Annual Meeting Highlights Collaboration and Opportunities in an Uncertain but Optimistic Future

This past year challenged the cooperative on several fronts – depressed energy and commodity markets and mild weather across the entire membership.

Basin Electric's strength is foundationally in the unity of its members, employees and communities. Strong and United. That was the theme of Basin Electric's 2016 annual meeting of the membership.

Basin Electric's 2016 annual meeting brought in more than 1,000 member co-op employees, directors, public officials and utility representatives and featured several updates on complex issues and developments, but woven throughout the entire two-day meeting was a reminder to all member cooperatives that Basin Electric exists to serve them.

Basin Electric board president Wayne Peltier, representing District 9 of Minnesota Valley Cooperative Light and Power, Montevideo, Minn., underscored that cooperatives tackle challenges with the tried and true cooperative response. "… to fight for what's right for our members, to show strength through numbers and to wield a mighty voice against even the most foreboding of threats like EPA's poorly considered Clean Power Plan."

This past year challenged the cooperative on several fronts – depressed energy and commodity markets and mild weather across the entire membership. The combination is rare and certainly

Above: Basin Electric Power Cooperative manager Paul Sukut addresses attendees of the cooperative's annual meeting in November. Opposite Page: Dr. Julio Friedmann discusses carbon capture and storage projects around the world.

unexpected, and resulted in some severe margin shortfalls.

"Adding to the complexity of our situation, we've also seen a huge influx of wind into the region," said Paul Sukut, Basin Electric CEO and general manager, during his Nov. 9 address to the membership. "We've seen wind offered at extremely low prices into the Southwest Power Pool marketing, overwhelming coal."

Sukut addressed the need to make a difficult decision to implement a rate increase across the membership in August, but reinforced that all options, including austerity and budget revisions, continue throughout the cooperative.

"You see, challenges and difficult situations are not new to Basin Electric. Look at our history. No matter the challenge, no matter the impossible scenario, somehow, we emerge even stronger and more united. Simply put, no one, is in a better position to emerge from this perfect storm than our cooperative family. No one is more resilient, nimble, adaptable, and forward-thinking than this family."

Highlights:

Basin Electric hosted a preconference session: Finding a Path in a Carbon-Constrained Future. The morning included a presentation by Patrick Day, partner for Holland and Hart in Wyoming providing insight into the litigation of the Clean Power Plan. A panel followed that included John Jacobs, Basin Electric senior vice president of Operations; Stacey Dahl, manager of external affairs at Minnkota Power Cooperative; and Bill Brown, CEO of Net Power. All shared technology opportunities being developed for addressing a carbon-constrained future. The last panel included Terry O'Clair, director of the Division of Air Quality for the North Dakota Department of Health; David Miller, director of research and commodity services for the Iowa Farm Bureau Federation; and Tony Clark, former commissioner of the Federal Energy Regulatory Commission. This panel shared thoughts on the regulatory system for addressing carbon limitations.

Senior staff provided reports following Basin Electric's 2016 Cooperative Plan regarding operational excellence; supporting growth and innovation; commitment to workforce and cooperative; and financials. They addressed how Basin Electric continues its history of pivotal decisions and triumph over daunting challenges; as well as the continued efforts to build infrastructure for a continually growing membership; financial successes in a challenging year; the interconnectivity of all the cooperative's resources; and regulatory/legislative updates.

Dr. Julio Friedmann provided the keynote address. Dr. Friedmann is a senior fellow at the Lawrence Livermore National Laboratory, where he serves as the chief expert in energy technologies and systems.

Friedmann's address centered on utilities moving forward with carbon reduction efforts, with a focus on innovative solutions to back-end carbon capture from coal-based facilities. During his keynote address, Friedmann discussed worldwide agreements addressing climate change. He said the Paris Agreement, signed and ratified earlier this year, was "beyond big."

"This is a massive change," he said. "Before this, we had the Kyoto Protocol, which was basically a circular firing squad where everyone was standing around with guns pointed at each other saying, 'Aren't you going to do this?' Paris is a completely different business model. It is more of a weight loss club, where everyone raises their hands and says, 'I'm going to lose 10 pounds.'"

The membership also heard from U.S. Sen. John Hoeven, R-N.D., at the open of the meeting Wednesday; Lieutenant Gov. Drew Wrigley Thursday morning; and a panel addressing the future of carbon in the new administration with U.S. Sen. Heidi Heitkamp, D-N.D.; Dr. Friedmann and Todd Parfitt, director of the Wyoming Department of Environmental Quality. More information will be made available on basinelectric.com.

During the Wednesday evening banquet, Basin Electric presented the Cornerstone Award, the highest award given by the cooperative, to Robert Engel, CEO of CoBank, for his work in support of rural America and help in financing the urea project at Dakota Gasification Company's Great Plains Synfuels Plant.

The following directors were re-elected to the Basin Electric board:

Leo Brekel, District 5, Tri-State G&T
Mike McQuistion, District 7, Rushmore Electric
Wayne Peltier, District 9

The membership voted on resolutions and bylaws changes, which includes the addition of new members – Mid-Yellowstone Electric as a Class C member in District 8; and Members 1st as a Class A member, and PRECorp, Fergus Electric and Tongue River as Class C members within District 10.

Illuminating Choices

Watts, Lumens, Kelvin Can Be Confusing When Buying Bulbs

By B. Denise Hawkins

Gone are the days when grabbing a lightbulb at the hardware store was as simple as knowing whether you were in search of a 40-watt, 60-watt or a 100-watt bulb.

Today, a trek down the lighting aisle can be confusing and at times intimidating as one wades through the packaging.

If you have been gradually making the switch to the new energy efficient lighting choices, you've noticed that more changes have come to the light bulb aisle. Remember when the odd looking corkscrew compact fluorescent (CFL) bulb was introduced to consumers a few years ago? It's still there and so are most of the classic pear-shaped incandescent bulbs. But today's lighting choices have expanded and gotten serious makeovers – their packaging labels and lingo included. There are LEDs, CFLs, halogen, lumens, CRI and more, and there is a host of lighting brands. But in recent years, the focus has been on making *all* bulbs more energy efficient and cost effective.

End of an Era

We've basked in the golden glow of Thomas Edison's incandescent bulb since the 1800s, but January 2014 marked the end of its run. That's when the federal government finalized its mandated phase out of selected general-purpose light bulbs and Edison's less energy efficient incandescent ones. While you still may find 100- and 75-watt bulbs on store shelves, manufacturers in the U.S. stopped producing them. The old 40- and 60-watt bulbs, which represented over half the market, are following suit. What brought about the lighting change? In 2007, the U.S. Department of Energy estimated that home and commercial lighting was consuming more electricity annually – about 300 billion kilowatt-hours of lighting or the equivalent of about 100 power plants – but most of it was wasted. Old-fashioned incandescent bulbs used plenty of energy to produce only 10 percent light, with 90 percent of the energy given off as heat. In comparison, today's more energy-saving incandescent light bulbs use 25 percent less energy to do the job of lighting the same spaces in your home.

Look on the Bright Side

Prime replacements for the traditional incandescent light bulb are the higher-efficiency CFL and LED or light emitting diode bulbs. But be prepared to pay more upfront for some of the bulbs you choose. Lighting experts say that LEDs are the best choice for energy efficiency and if price is not a concern – they can last for up to two decades, save you 75 percent or more in energy costs, and offer superior color and brightness. However, they can cost an estimated $10 to $60 per bulb.

The Energy Department assures consumers that there is a bright side – lower electricity bills over the longer term. These are their estimates: using a traditional incandescent bulb adds about $4.80 per year to the average household electric bill, but a CFL bulb adds just $1.20 a year and an LED about $1 per year. That means that a typical household could potentially save about $50 per year by replacing 15 old incandescent bulbs.

Lighting the Way

Since lighting accounts for nearly 20 percent of the average home's electricity use, don't stay in the dark when shopping for new bulbs that save on energy and your electric bill. **Things to know before you go:**

Lumens are the new watts. It's all about the lumens or the amount of light a light bulb emits. Remember this formula: The higher the lumens, the brighter the light – to replace a 100-watt incandescent bulb, choose a bulb that offers about 1,600 lumens. There are handy charts at www.energystar.gov/ that help you compare the old measure of watts to lumens.

Three-steps to your new bulbs. STEP 1: Choose the amount of lumens you need based on how bright you want a room; **STEP 2:** Determine which bulb has the lowest estimated energy cost per year. This will save you the most money; and **STEP 3:** Choose bulbs based on your needs – how long it will last and light appearance.

Read the label. Always check the package, making sure that it carries the U.S. Department of Energy's ENERGY STAR® logo. New Lighting Facts labels on boxes will also help consumers understand what they are purchasing – amount of lumens, estimated annual operating cost and light color.

Don't Watch for Watts, Look for Lumens!

Tips for lightbulb shopping by lumens instead of watts

A lumen is a measurement of how much light you are getting from a light bulb. More lumens means a brighter light, fewer lumens a dimmer light.

What you will see on the package

Lighting Facts Per Bulb

Brightness	**870 lumens**
Estimated Yearly Energy Cost	**$1.57**
Based on 3 hrs/day, 11¢/kWh Cost depends on rates and use	
Life Based on 3 hrs/day	**5.5 years**
Light Appearance	
Warm — Cool 2700 K	
Energy Used	**13 watts**

Contains Mercury
For more on clean up and safe disposal, visit epa.gov/cfl

ENERGY STAR

- **Brightness**
- **Energy cost**
- **The bulb's life expectancy**
- **Light appearance** (for example, if the bulb provides "warm" or "cool" light)
- **Wattage** (the amount of energy the bulb uses)
- **Whether the bulb ontains mercury**

Brightness
870
lumens

Estimated Energy Cost
$1.57
per year

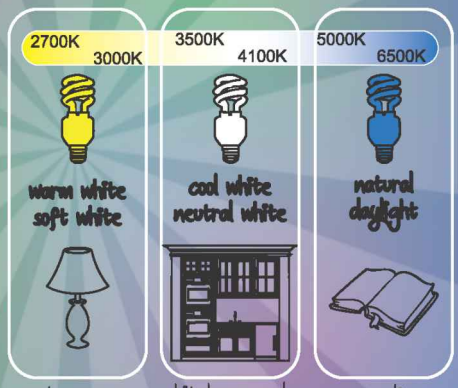
What watts translate to

Watts vs. Lumens

What you used to look for	WATTS (energy consumed)	LUMENS (brightness output)	Now you look for
	150 w	2600 lm	
	100 w	1600 lm	
	75 w	1100 lm	
	60 w	800 lm	
	40 w	450 lm	

What Color Bulb Would Work Best For Your Use?

Light color is measured on a temperature scale referred to as Kelvin (K). Lower Kelvin numbers mean the light appears yellow; higher Kelvin numbers mean the light is whiter or bluer.



Common uses	most spaces, standard color	kitchens and work spaces	reading

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Defending the Surge
Is Your Home Protected?

By Michael Federman

As the technology of electric devices advances, so does the need to protect them from power surges.

With all the microprocessors that drive modern appliances, computers, and home entertainment systems, proper use of surge suppressors can save you the expense of replacing damaged equipment.

A power surge usually lasts only a fraction of a second, but the excessive voltage is enough to destroy circuitry inside sensitive electronics.

Digital devices have thousands of tiny on and off switches that continuously send and receive information during normal operation.

A shift in the smooth supply of electricity can disrupt this flow of information and cause the device to malfunction.

Flickering lights and blinking computers are sure signs of power fluctuations during a storm. A direct lightning strike will send up to 200,000 amps coursing through a power line, enough to burn up standard 20-amp electronics.

But most surges are less dramatic and occur without a homeowner's knowledge. These surges result from sudden changes in electricity caused by anything from a downed power line to the cycling energy use of a hair dryer.

Transient surges can produce instantaneous results: a crashed computer, for example. But often the damage goes undetected, only to surface later in a detrimental way, such as a microwave that suddenly stops working.

Homeowners can protect their electronics with surge suppressors. As the term implies, these devices suppress an erratic power supply by diverting excess voltage to a ground wire. Suppressors will not protect a home from a direct lightning strike.

Suppressors come in a multitude of applications, from single-plug wall units to rack-mounted, home-entertainment system protection.

Many models also have options for telephone line and cable television connections to protect modems, fax machines and video equipment.

Here are some features to look for when buying a surge suppressor:

- Underwriter's Laboratories (UL) tested, with a UL 1449 listing and the term "Transient Voltage Surge Suppressor." The UL 1449 standard changed in 1998, so check old surge suppressors to make sure they still comply.
- An indicator light or some other feature is needed to show whether the device has experienced a power spike. If the light is out, the suppressor no longer works properly and should be replaced.
- Voltage suppression of 330 volts per UL standards. Higher voltage ratings give less protection.
- The suppressor must discharge excess energy to ground, not to neutral.
- Make sure any manufacturer insurance guarantees cover the cost of replacing damaged equipment.
- Check with your local utility before buying a surge suppressor. Your utility can recommend proper surge protection for various applications and often carries high-quality models at competitive prices.

Mike Federman is a contributing writer on energy at Ruralite Services.

Surge and Protect

Power Surges and How to Protect Yourself

The Issue

The Solutions

WHAT IS A "POWER SURGE"?

A power surge, or transient voltage, is a ***sudden and unwanted increase in voltage that can damage, degrade or destroy*** the sensitive electronic equipment in your home or business.

CAUSES

The National Electrical Manufacturers Association (NEMA) estimates that ***60-80% of surges are created within a facility***, such as when large appliances, like air conditioners, turn on and off. Surges can also originate from the ***electric utility company during power grid switching***. Lastly, the most powerful surges can be caused by ***lightning***.

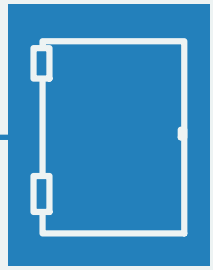
IMPACT

A spike in voltage can be ***harmful to electrical devices*** in your home if the increase is above the device's intended operating voltage. This excess voltage can cause an arc of electrical current resulting in ***heat that damages*** the electrical components. Repeated small-scale surges may slowly ***damage your electronic equipment*** and ***shorten the life*** of appliances and electronics involved.

POINT-OF-USE SURGE PROTECTION DEVICES

Protect only the items that are ***directly plugged into the device*** from most electrical surges. It does not suppress or arrest a surge but ***diverts the surge to ground***. Use point-of-use surge protectors that have an indicating light and/or audible alarm that alert when it needs replacement.

SERVICE ENTRANCE SURGE PROTECTION DEVICES



Mounted in or on your main electrical panel or at the base of the electric meter, this device provides ***protection for your entire electrical system***. This device covers components that cannot be connected to a point-of-use device, such as outlets and light switches.

REMINDERS

- No surge protection device can handle a ***direct lightning strike***. The best surge protection is to ***unplug devices from the wall*** if you suspect a surge might be coming.
- Power strips ***do NOT provide surge protection***. Be sure you are relying on the appropriate device for protection.
- Power strips and surge suppressors ***don't provide more power to a location***, only more access to the same limited capacity of the circuit into which it is connected.

Regional Dateline

December 15-March 31
South Dakota Snowmobile Trails Season, Lead, SD 605-584-3896

December 22-23
1880 Train Holiday Express Hill City, SD, 605-574-2222

January 7-14
71st Annual Snow Queen Festival, Aberdeen, SD www.sdsnowqueen.com

January 12
The Ennis Sisters in Concert Spearfish, SD, 605-642-7973

January 12-14
16th Annual Ice Fishing Tournament, Mobridge, SD 605-845-2500

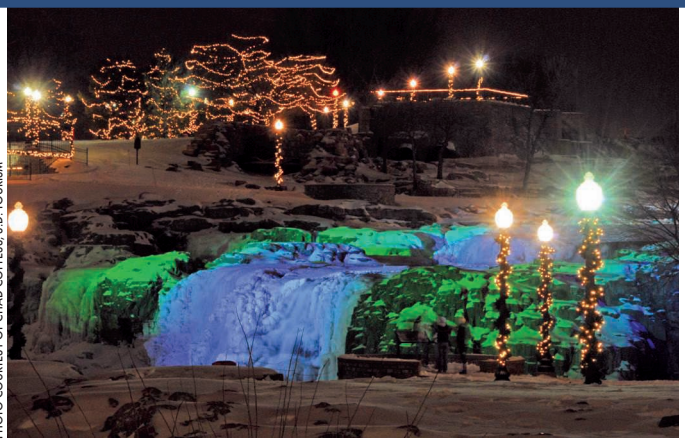
January 18-26
38th Winter Art Show 10 a.m. to 5 p.m. Spearfish, SD, 605-642-7973

January 19-21
Snowmobile Rally Deadwood, SD, 605-578-1876

January 20-21
ISOC Deadwood SnoCross Showdown, Deadwood, SD 605-578-1876

January 21
Bark Beetle Blues Crawl Custer, SD, 605-440-1405

January 21
Tommy: A Bluegrass Opry by the HillBenders, Spearfish, SD 605-642-7973



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Events of Special Note

November 18-January 8
Winter Wonderland, Falls Park Sioux Falls, SD, 605-275-6060

February 11
Ben Folds with the South Dakota Symphony Sioux Falls, SD, 605-367-6000

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.

January 27-February 5
Annual Black Hills Stock Show & Rodeo, Rapid City, SD 605-355-3861

February 3-4
Who Got Greased? Murder Mystery Dinner Theater Elks Lodge, 705 Circle Drive Aberdeen, SD, 605-380-9743

February 4
Twenty One Pilots in Concert Sioux Falls, SD, 605-367-7288

February 4
LHIA Fishing Derby 11 a.m. to 3 p.m., City Boat Landing Access Point Lake Hendricks, MN

February 7-11
Winter Farm Show Watertown, SD, 605-886-5814

February 10-11
Strawbale Winery Valentine Twilight Flights, Renner, SD 605-543-5071

February 10-12
35th Annual Black Hills Sport Show and Outdoor Expo Rapid City, SD, 605-394-4115

February 11
Sioux Empire on Tap Sioux Falls, SD, 605-367-7288

February 16-18
Sioux Falls Sno Jam Comedy Festival, Sioux Falls, SD siouxfallssnojamcomedyfest@gmail.com

February 16-19
Steel Magnolias Community Theater, Spearfish, SD 605-642-7973

February 17-19
Sioux Empire Wacipi Sioux Falls, SD, 310-922-1886

March 4-7
Summit League Basketball Championship Sioux Falls, SD, 605-367-7288

March 11-12
2017 Gun Show, American Legion Hall, Saturday 9 a.m. to 5 p.m., Sunday 9 a.m. to 3 p.m. MST, Philip, SD 605-859-2635, 605-859-2280 605-859-2892 or 605-859-2219

March 17-18
28 Below Fatbike Race Lead, SD, 605-584-3435

March 24-25, March 31-April 1
59th Annual Schmeckfest Freeman, SD, 605-925-4237

March 31-April 2
Professional Bull Riders Built Ford Tough Series Sioux Falls, SD, 605-367-7288

April 7-8
Forks, Corks and Kegs Food and Wine Festival Deadwood, SD, 605-578-1876