# Traverse Electric

A Touchstone Energy® Cooperative

August 2018 Vol. 19 No. 4

# **Coperative** Connections



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## MANAGER'S COLUMN

# What is Grid Resiliency?



Joel Janorschke, General Manager

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Whether we're at the mercy of Mother Nature, we have confidence in the resiliency of our system to recover from the situation with as little disruption as possible. Resiliency of the grid is one of the most popular concepts being talked about in the electric industry today. This concept recently made headlines in the wake of Hurricanes Irma and Maria, which caused extraordinary damage to Puerto Rico's electric grid resulting in the longest sustained outage in U.S. history. Lack of resilience became the go-to phrase to describe Puerto Rico's grid. As a Traverse Electric member, what does grid resiliency mean for you?

Resiliency is many things – it's reliability in your electric service, it's our ability to efficiently restore your power, it's being able to meet the demands of new technology and it's how we serve you with various generation sources without skipping a beat. Ultimately, resilience is how we deliver on our promise to improve the quality of life for our member-owners.

When it comes to having a resilient electric grid, it begins with a system that is designed and built to withstand high winds, powerful storms, cybersecurity threats and other disruptions that could result in outages. A resilient grid is also flexible and adaptable by allowing different types of generation – such as wind, solar, coal and hydro – to seamlessly work together to provide you with safe and reliable power. The way our systems react to advancements in technology – from demand response investments to serving the needs of electric vehicles – all factor into the resilience of our grid.

Resiliency is a 24/7, 365-days-a-year task. Whether it's the power lines, substations or generation facilities on our grid, it takes proactive maintenance and investment to keep them running smoothly. With thousands of consumers without power for months, the lack of resiliency in Puerto Rico's power grid wasn't solely caused by hurricane damage; it was the result of years of neglect in taking care of their system and preparing for a worst-case scenario.

In a similar way to how we maintain our vehicles with regular oil changes, inspections and tire rotations, a grid must also be properly maintained. Throughout the year, we regularly conduct pole and line inspections. Our goal is to find a problem before it becomes one. For example, if we find a weak pole that has damage from termites, we replace that pole. Doing so ensures that pole is as strong – or as resilient – as it can be.

Living in the Midwest, we know that significant power outages can occur, especially as we enter spring and summer storm season. Whether we're at the mercy of Mother Nature, we have confidence in the resiliency of our system to recover from the situation with as little disruption as possible.

In the dictionary, resilience is defined as "the ability to bounce back, recover quickly and go back into shape or position after being stretched." When it comes to providing our member-owners with resilient service, this is what we work toward – day in and day out!



# Traverse Electric <sup>Cooperative</sup> Connections

(USPS No. 018-903)

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#### In case of a power outage call 1-800-927-5443

Traverse Electric Cooperative Connections is published monthly by Traverse Electric Cooperative, PO Box 66, 1618 Broadway, Wheaton, MN, 56296 for its members. Families subscribe to Traverse Electric Cooperative Connections as part of their electric cooperative membership. Traverse Electric Cooperative Connections' purpose is to provide reliable, helpful information to electric cooperative members on matters pertaining to rural electrification and better rural living.

Subscription information: Electric cooperative members devote 50 cents from their monthly electric payments for a subscription. Nonmember subscriptions are available for \$12 annually. Periodicals Postage Paid at Wheaton Post Office, Wheaton, MN, 56296 and at additional mailing offices.

POSTMASTER: Send address changes to: Traverse Electric Cooperative Connections, PO Box 66, Wheaton, MN 56296; Phone (320) 563-8616; Fax (320) 563-4863;

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Design assistance by SDREA.



# **Update Your Contact Information**

In the utility business, we know rough weather will occur and sometimes power outages simply can't be avoided. But did you know there are steps you can take to ensure your electricity is restored as quickly and safely as possible? By

keeping your contact information up-to-date, you can take full advantage of the services Traverse Electric offers.

You may have noticed prompts through our billing statements and webpage requesting your updated contact information. If we don't have the correct phone number linked to your home address, it makes it very difficult to contact you during an outage.



Updating your contact information is helpful because it

speeds up the power restoration process. With correct information, we can also contact you in advance of planned outages for repairs and maintenance.

Please call 320-563-8616 and make sure you're up to date.



# Energy Efficiency Tip of the Month

Look for LED products and fixtures for outdoor use, such as pathway, step and porch lights. Many include features like automatic daylight shut-off and motion sensors. You can also find solar-pow-

ered lighting for outdoor spaces.

Source: energy.gov

# Murphy



# IN CASE OF OUTAGE

1 ST Check the fuses or breakers in your home or building in which you do not have power. Check your breaker below your meter on the OND vard pole. Some residential members may not have breakers. If you still do not have power, call your ZRD neighbor to check if their electricity is also off. Call immediately; do not wait for your **A**TH neighbor to call in the outage. Call Traverse Electric Cooperative at **S**TH 1-800-927-5443.

# SAFETY TIPS

# Home Project Safety

More people are doing their own remodeling, repairs,

maintenance, landscaping, and construction projects inside and outside the home. Safe Electricity urges all do-it-yourselfers to take precautions,



especially when working around electrical equipment and overhead power lines.

Make sure outdoor outlets have a ground fault circuit interrupter (GFCI). Use a portable GFCI if your outdoor outlets don't have them. It's also a good idea to have GFCIs professionally installed in wet areas of the home, such as the kitchen, bath and laundry.

### Safety tips to remember include:

- Look up and around you. Always know of the location of power lines, particularly when using long metal tools, like ladders, pool skimmers, and pruning poles, or when installing rooftop antennas and satellite dishes or doing roof repair work.
- Be especially careful when working near power lines attached to your house. Keep equipment and yourself at least 10 feet from lines. Never trim trees near power lines — leave that to the professionals. Never use water or blower extensions to clean gutters near electric lines. Contact a professional maintenance contractor.
- If your projects include digging, like building a deck or planting a tree, call the national underground utility locator at 8-1-1 before you begin. Never assume the location or depth of underground utility lines. This service is free, prevents the inconvenience of having utilities interrupted, and can help you avoid serious injury.
- Always check the condition of cords and power tools before using them. Repair or replace worn or damaged cords and tools.
- Electricity + water = danger. If it's raining or the ground is wet, don't use electric power or yard tools. Never use electrical appliances or touch circuit breakers or fuses when you're wet or standing in water. Keep electric equipment at least 10 feet from wet areas.

Make certain home electrical systems and wiring are adequate to support increased electric demands of new electric appliances, home additions, or remodeling projects. An older home may be inadequately wired for today's electricity consumption, putting your family at risk for fire and electrical shock. Have a professional replace worn and outdated circuitry and add outlets for appliances and electronics – this is not a job for casual do-it-yourselfers!



The soil on your farm or ranch is rich with nutrients and minerals... AND underground gas, oil and water pipelines.

Excavations, terracing projects, fence post installation, tiling or subsoiling can create safety hazards due to the depth of the excavations.

CALL BEFORE YOU DIG in order to notify utility companies who will be affected by the excavation. This service is FREE.

No one digs more dirt than America's farmers and ranchers. Understanding what is below ground will help you DIG SAFELY above ground. Call before you dig!

# KIDS CORNER SAFETY POSTER



### "Neverremoveaplugwhenyourhandsarewet." Aida Mikkonen, 10 years old

Aida is the daughter of Patrick and Carrie Mikkonen, Mt. Vernon, S.D. They are members of Central Electric Cooperative, Mitchell, 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.



#### **Tzatziki Potato Salad**

2 lbs. unpeeled Yukon Gold potatoes, cut into 1-inch cubes (about 6 cups)

3/4 cup (6 oz.) plain Greekstyle yogurt

1/4 cup reduced fat sour cream

2 T. milk

1 T. lemon juice

2 tsp. honey

2 tsp. McCormick® Garlic Powder

1-1/2 tsp. McCormick® Oregano Leaves

1/2 tsp. McCormick® Black Pepper, Coarse Ground

1/2 tsp. Sea Salt from McCormick® Sea Salt Grinder

1 cup diced unpeeled, seeded cucumber

1/4 cup chopped red onion

Place potatoes in water to cover in large saucepan. Bring to boil on high heat. Reduce heat to low; simmer 10 to 12 minutes or until potatoes are fork-tender. Drain well. Cool completely. Mix yogurt, sour cream and milk in small bowl with wire whisk until well blended. Add lemon juice, honey and seasonings; mix until well blended. Place potatoes, cucumber and onion in large bowl. Add yogurt dressing; toss gently to coat well. Garnish with crumbled feta cheese, if desired. Cover. Refrigerate until ready to serve. Makes 10 (2/3 cup) servings.

Nutritional Information Per Serving: Calories 97, Total Fat 1g, Sodium 109mg, Cholesterol 3mg, Carbohydrates 18g, Protein 4g, Dietary Fiber 2g

**Pictured, Cooperative Connections** 

## Pineapple Pretzel Salad

1 stick butter

1 (12 oz.) container whipped topping

1 (20 oz.) can crushed

pineapple, drained

1 cup crushed pretzels 1 cup sugar, divided

1 (8 oz.) pkg. cream cheese

Melt butter. Stir in pretzels and 1/2 cup sugar. Spread on 9x13-inch baking sheet. Bake at 350°F. for 7 minutes. Cool. Break into pieces and set aside. Beat together softened cream cheese and remaining 1/2 cup sugar. Stir in whipped topping and pineapple. Add pretzel mixture just before serving.

Beth Eickman, Salem, S.D.

## Chicken Salad

1 chicken, roasted, deboned and diced 2 lbs. red grapes, washed	2 cups diced celery
	1 to 1-1/2 cups real mayonnaise
and halved 2 cups diced carrots	1 (9 oz.) can Pik-Nik Shoestring Potatoes
Mix together first 5 ingredients. Add shoestring potatoes just before serving. This looks lovely on a large leaf of lettuce.	

Judy Mendel, Doland, S.D.

## Make Ahead Rhubarb Salad

2 cups diced rhubarb	1 cup chopped celery
1/2 cup sugar	3/4 cup chopped nuts
1 (3 oz.) pkg. strawberry gelatin	1 (8 oz.) container whipped topping

1 (3 oz.) pkg. cream cheese

In a saucepan, cook rhubarb and sugar for 10 minutes; remove from heat. Stir in gelatin and cream cheese; cool. Add celery and nuts. Fold in whipped topping. Refrigerate overnight.

Elaine Rowett, Sturgis, S.D.

## Fruit Salad

1 can peach pie mix	1 pint fresh strawberries, sliced or diced 1 (16 oz.) container whipped	
1 small can chunk pineapple, drained		
2 bananas, sliced or diced	topping	
	1	

In a large bowl, fold together all ingredients.

Shirley Thedorff, Centerville, S.D.

Please send your favorite salad, garden produce and pasta recipes to your local electric cooperative (address found on Page 3). Each recipe printed will be entered into a drawing for a prize in December 2018. All entries must include your name, mailing address, telephone number and cooperative name.

## ENERGY CENTS

# Understanding Appliance Energy Use



Pat Keegan

Collaborative Efficiency

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

## Footnotes

aSource https://www.consumerreports.org/ refrigerators/best-energy-efficient-refrigerators/

bSource: https://www.energystar.gov/index. cfm? c=products.pr\_save\_energy\_at\_home

cSource: http://www.energy.gov/eere/ buildings/appliance-and-equipment-standards-program

dSource: http://www.siliconvalleypower.com/ for-residents/save-energy/appliance-energy-use-chart

eSource: https://www.energystar.gov/index. cfm?fuseaction=refrig.calculator

fSource: https://www.energystar.gov/product finder/most-efficient/me-certified-refrigerators?me\_type\_filter=Bottom%20Freezer

gSource: https://www.energystar.gov/mostefficient/me-certified-clothes-washers/

hSource: https://www.energy.gov/energysaver /appliances-and-electronics/kitchen-appliances

iSource: https://www.c2es.org/content/home -energy-use/ **Dear Pat:** Several of my appliances are getting old and will need to be replaced soon. Will the appliance choices I make have much impact on my energy bill? – Chelsea

**Dear Chelsea:** Your energy use varies month to month, so it can be difficult to see how much difference an appliance purchase makes. It's best to view the purchase over the lifetime of the equipment. Think about the up-front cost and the lifetime energy cost. In a *Consumer Reports* test, the most efficient refrigerator used \$68 per year less electricity than the least efficient model.<sup>a</sup> Multiply that difference over a decade or two, and the lifetime energy savings could be greater than the up-front cost. All it takes to get the best appliance for your needs is some initial research.

Appliance energy use is usually less, on average, than home heating and cooling bills, but can be several hundred dollars each year<sup>b</sup>. Your appliance use depends on factors like the model, how often you use it, the settings you use for its particular function and even the time of day it is most used.

Over the last few decades, new appliances became more energy efficient, driven partly by minimum government standards. These standards, created by the U.S. Department of Energy, save consumers over \$60 billion each year.<sup>c</sup> Appliances are required to include an Energy Guide label that shows estimated energy use and operating cost per year. These labels help you compare different models and calculate the initial cost against the long-term savings.

Some appliances will also have an ENERGY STAR<sup>®</sup> label. This indicates the appliance is substantially more efficient than the minimum standard. Your greatest energy savings opportunities can come from replacing an old appliance with an ENERGY STAR-rated appliance. Removing a refrigerator that's 20 years old and replacing it with a new ENERGY STAR model can lower the monthly electricity cost by 75 percent, from \$16.50 to less than \$4.<sup>d</sup>

In some cases, the configuration of the appliance can also make a substantial difference. For example, a side-by-side refrigerator/freezer uses about 70 percent more energy than other configurations,<sup>e</sup> with all the most efficient models having the refrigerator stacked on top of the freezer.<sup>f</sup> All 36 of the most efficient clothes washers of 2018 were front-loading models.<sup>g</sup>

Consider how much you use the appliance. The more you use the appliance the greater your savings will be from choosing a more efficient model. If you use the appliance less or have a small household, you may get by with a smaller refrigerator or freezer, which will save you money.

How you operate appliances can also make a difference. Here are some easy ways to saveh i:

### **Refrigerator/Freezer:**

- Set your refrigerator at 35 to 38 degrees and your freezer at 0 degrees.
- Make sure there is adequate air flow between the wall and the back of the unit.
- Keep the refrigerator relatively full when possible.
- Replace the seals around the doors if they appear to be leaking air.
- Defrost the refrigerator and freezer regularly.

#### Stove/Oven

- Use the correct size of burner to fit the pan.
- Use smaller appliances like a microwave or slow cooker instead of the oven when possible.

#### Dishwasher

- Use the most energy-efficient and shortest setting that gets your dishes clean.
- Air dry rather than using the heated dry function.
- Wait to run a load until the dishwasher is full.

Make the most out of your appliance energy use with a little research before buying a new model and a few easy adjustments to the way you use them.



#### There's more than one football field's length of buried utilities for every man, woman and child in the U.S.

There are more than 100 billion feet of underground utilities in the United States, according to data compiled by CGA from various industry groups.



## Don't be a statistic. Call 811 before digging.

45 percent of American homeowners who plan to dig this year said in a recent survey that they would NOT call 811 beforehand, putting themselves and their communities at risk.





an underground utility line is damaged because someone decided to dig without first calling 811.





South Dakota teachers sponsored by Basin Electric Power Cooperative this year included, from left, Maureen Beer who lives in Timber Lake, and teaches in Little Eagle; Shannon Bergan who lives and teaches in Aberdeen; Ja Lynn and Jason Burma who both teach and live in Miller; Robert Dunwoody who lives and teaches in Corsica; and Mike Sees who lives and teaches in Irene.

# Teachers Head to N.D. For Lignite Energy Seminar

More than 100 elementary and secondary teachers switched roles in mid-June, as they became the students at an educational seminar conducted by the Lignite Energy Council. The seminar, held June 11–14 at the National Energy Center of Excellence on the Bismarck (N.D.) State College campus, included educators from Minnesota, Montana, South Dakota and North Dakota.

The seminar, titled "2018 Lignite Education Seminar: Energy, Economics and Environment," provided teachers with the information and educational materials they need to teach their students how lignite is mined and used to produce energy for homes, farms and businesses in the Upper Midwest. The seminar covered lignite's economic impact on the region, as well as important environmental issues affecting the lignite industry.

As part of the seminar, the teachers toured the Center Mine, Milton R. Young Station, Falkirk Mine, Coal Creek Station, the Freedom Mine, Antelope Valley Station, and the Great Plains Synfuels Plant.

Teachers who attend the seminar and complete a lesson plan can choose from three North Dakota universities from which to receive two graduate professional development credits: University of North Dakota, North Dakota State University and Minot State University.

Over the years, the Lignite Energy Council's Teacher Seminar has received two prestigious awards. It was the 2012 winner of the Interstate Mining Compact Commission's mineral education award in the public outreach category. In 2007, the Lignite Energy Council's Teacher Seminar was also recognized by the American Coal Council for "excellence in the advancement of energy education."

Since 1986, more than 3,600 teachers have attended the Lignite Energy Council's Teacher Education Seminar.



# UP, UP AND AWAY

# Cooperative Brand takes to Southern Hills Skies

#### Brenda Kleinjan

editor@sdrea.coop

Look to the skies above Hot Springs in late August and you'll likely see a familiar sight, albeit in a slightly unfamiliar location.

The Touchstone Energy<sup>®</sup> Cooperatives brand will be wafting above the Southern Hills when it takes part in the Fall River Hot Air Balloon Festival Aug. 25 and 26 in Hot Springs.

The Touchstone Energy<sup>®</sup> Cooperatives balloon is one of five operated by the Illinois-based Cooperative Balloon Associates. CBA was organized in 1999 to help promote the newly launched brand of America's electric cooperatives. Two decades later, the brand ambassador continues its journey.

The Touchstone Energy Cooperative balloon is just one of about 20 hot air balloons scheduled to appear at the third annual Fall River Balloon Festival.

Weather-permitting, balloons will launch at 6 a.m. both Saturday and Sunday mornings at the Hot Springs Municipal Airport. A night glow – where the balloons inflate their envelopes and illuminate their craft with their burners – is set for 8:30 p.m. Saturday at the airport.

Throughout the day, visitors to Hot Springs can



take part in ballooning inspired activities.

A Plein Air arts event is scheduled for downtown and organizers are seeking15 artists to participate. Those registering prior to Aug. 15 have a chance to win a hot air balloon ride.

On Saturday morning, visitors can walk on the inside of a balloon envelope from 9 a.m. to 11 a.m. at the Mammoth site.

A vintage car show and an art walk and chalk are also planned.

For more information about the festival, visit their Facebook page at facebook. com/FallRiverHotAirBalloonFestival or go to the Hot Springs Chamber of Commerce site at HotSprings-SD.com.

# About the Touchstone Energy Balloon

The Touchstone Energy<sup>®</sup> Hot Air Balloon serves as a goodwill ambassador for Touchstone Energy<sup>®</sup> Cooperatives and its member cooperatives. The fleet's two newest balloons are 77,000 cubic foot hot air balloons that stand over 77 feet tall and are 60 feet wide when fully inflated. Each are built of hyperlife fabric panels and boast a 14 cubic foot ascot basket. They carry a pilot and two average size passengers. The balloons are fired by dual propane burners and fueled by two 15-gallon propane tanks. The balloons were built by Lindstrand Balloons of Hanover, Ill., in 1999, 2002, 2005, 2007, 2009 and 2014. The first two balloons have been retired.

The balloons have the Touchstone Energy<sup>®</sup> Cooperatives logo in bold letters on three sides. Everywhere the balloons go,

# Everywhere the balloons go, they promote the brand and the values of Touchstone Energy Cooperatives.

they promote the brand and the values of Touchstone Energy Cooperatives... providing service with integrity, accountability, innovation, and commitment to community. These values are demonstrated through the presence of the balloons at national competitions and special events, and the team's interactions with spectators. These values are also conveyed in local philanthropic fundraising activities which the Touchstone Energy Hot Air Balloon program supports whenever and wherever the balloons are flying.





# Great Plains Balloon Race

Look to the skies over Sioux Falls Aug. 10-12 and you will likely see a colorful display.

The Great Plains Balloon Race is set to launch from Kenny Anderson Park near Sioux Falls Washington High School in the city's northeast corner. About 10 or 11 balloons are expected for this year's race.

Among the balloons scheduled for the race is the Call811.com balloon which will be promoting the importance of calling before you dig. The balloon's appearance coincides with national 8-1-1 Day on Aug. 11.

### Schedule

All launches at Kenny Anderson Park

Aug. 10 - Founders Cup Challenge

Balloon Launches at 7 p.m.

**Aug. 11 -**Launches at 6:30 a.m. and 7 p.m. Balloon Glow at 8:30 p.m.

#### Aug. 12

Balloon Launches at 6:30 a.m. All activities are weather-permitting.

#### Also on the Calendar

Balloons over DTSF on Aug. 3. and Sept. 7 at 7 p.m. – Downtown Sioux Falls

Sept. 1 - Balloons and Beer at A Homestead Brew at Valley Springs.

For more information, contact the Sioux Falls Ballooning Association.

# ENERGY EFFICIENCY

# Five Quick Tips: Lowering Energy Use For Small Businesses

As a small business owner, you've got a lot on your plate. When it comes to saving on energy costs, consider these five quick tips to help you achieve maximum efficiency!

#### 1. Fully adopt laptops

Laptops use significantly less energy than desktop models. One desktop may use anywhere from 60 to 250 watts, where a laptop only uses 14 to 45 watts.

#### 2. Require sleep mode

Computers use almost nothing for electricity when in sleep mode, about 1 to 6 watts. Be sure all employees are required to shut down or put their computers to sleep each day after work.

#### 3. Show old exit signs the door

As a business, you're legally required to have fully functioning exit signs at all times. According to energystar.gov, many exit signs in today's buildings are older and require frequent maintenance due to the short life span of the lamps that light them. Many of these signs consume more than 350 kilowatt-hours and cost \$28 each annually to operate. That adds up!

Consider replacing them with LED signs to save a considerable amount of energy, greatly reduce carbon dioxide pollution and extend your time between required maintenance by up to 10 years. This up-front investment will save you in the long run.

#### 4. Get smart with your thermostat

In the summer, try setting your thermostat between 78 and 80 degrees during business hours and above 80 while employees are out. In the winter, try between 65 and 68 during business hours and 60 to 65 while unoccupied. Even older thermostats are programmable so you don't forget to adjust the temperature, but getting a smart thermostat makes remembering and saving a lot easier.



many different features and capabilities to choose from, upgrading to a smart device today will help you continue to understand your energy use and save for years to come.

#### Consider ENERGY STAR\* for everything

Remember that the ENERGY STAR logo means more money in your pocket. So



many things in your business have the potential to be upgraded. Work to upgrade all of your appliances, electronics and fixtures over time. Remember to check for the ENERGY STAR logo on computers, printers, copiers, refrigerators, televisions, windows, thermostats, ceiling fans, exit signs and more!

Contact your local Touchstone Energy<sup>®</sup> Cooperative to discuss available energy audits for your small business as well as money-saving rebates on appliances and building upgrades!

Together we are re-energizing efficiency.



# May Board Meeting Highlights

**BOARD NEWS** 

The May board meeting was held on Tuesday, May 29, 2018, at 8 a.m. All board members were present.

Staff members present were General Manager Joel Janorschke, Dale Schwagel and Karen Lupkes.

- The minutes of the April board meeting were approved.
- The April check register was approved.
- The East River May video report was viewed.
- Pat Homan reported on East River board and Basin Electric business.
- Schwagel give the Operations Report. Items discussed included: Idle services
  - April outages
  - Spring road restrictions
  - ► 2018 contractors
  - ► Pole inspections
  - MNDOT load securement training
  - Upcoming projects and projects completed
  - Safety program update
- Janorschke presented the Manager's Report, which included:
  AMI update
  - ▶ Review of meetings attended
  - ▶ REED loans
  - Proposed new elevator facility in our territory
  - East River's load control
  - ► Blinking lights out of the Dumont Substation
  - ► Renewable energy credits
  - Demand billing
- Reviewed and approved the April Financial Report.
- Update on recent audit conducted by CliftonLarsonAllen LLP
- Star Energy's generator program was discussed.
- List of upcoming meetings and attendees was reviewed.



# The Latest and Greatest in Smart Home Technologies

Today's smart home has blossomed to near Jetson-esque capabilities. The applications for home automation are racing ahead, fueled by the near ubiquitous availability of wireless technology and the growth of the Internet of Things.

The actual smart home gadgets and technologies continue to evolve, but the mobile app seems to be taking the lead. Let's catch up with the advances in some key areas.

Smart thermostats deserve top billing as they were truly the first smart device to become mainstream. Product choices abound with smart options for baseboard electric being developed, while the focus remains solidly on convenience, energy savings and peace of mind.

Geofencing is one of the best enhancements in this category. Link your smart thermostat to your smart phone, set a radius around your domicile, and whenever you cross that boundary your thermostat goes into away or return mode, depending on which way you are heading.

**Smart security** is surging. Smart door locks were the first entrants in this category. More recently, video doorbells have entered the fray where you can see who is at the door from anywhere in the world. Very slick.

Wireless cameras have dropped in price, allowing you to canvas your home and property to keep an eye on things anywhere. Get an alert? Open the app and find out what's going on at home.

**Smart smoke and CO sensors** are key in the safety sector, with the capability of sending alerts to your phone, allowing remote status checks and silencing alarms from the app – all without sacrificing that awful, ear-splitting alert we have come to love.

**Smart appliances** are slowly grinding forward. Refrigerators with cameras allow

you to check for needed items while at the grocery store, and dryers sense when electric use is highest and turn off – talk about demand response! Even HVAC systems, including window air conditioners, are sporting mobile apps these days.

There is not a huge amount of automation for stoves and cooktops. Controlling this appliance remotely seems too dangerous unless the feature is to turn it off. In that case, chalk up another one for peace of mind by resolving that nagging vacation worry, "Did I turn the stove off?"

Smart lighting seems to have become a

convergence of mood, efficiency, convenience and security. This is where a smart hub and its software might make sense. Setting up a coordinated lighting schedule is easier from a single interface. Create "scenes" for individual rooms or for the whole house. For security, grab a scene that gives your castle a lived-in look.

Perhaps the coolest new entrants are the **voice-controlled assistants.** These are receiving a lot of attention and, depending on the capabilities they are given, have the potential to command everything via voice, freeing you from the tedium of opening an app to control something. For example, there is a skill for Alexa that, if set up with your co-op's billing and metering systems, allows the homeowner to ask for current bill amounts and receive alerts when a specific use has been reached.

The smart home circa 2018 is a lot closer to the cartoon vision of the Jetsons. With the ease of installation, programming and use enabled by wireless technology and smart phone apps, anyone not already engaged with smart home tech should at least consider dipping a toe in the water.



- Smart Thermostat Apps: Geofencing is great enhancement for smart thermostat apps. Set a boundary with your smartphone and when you leave the boundary, the thermostat switches to away or return mode.
- 2 Smart Security Apps: Video doorbells are becoming increasingly popular, allowing consumers to keep a watchful eye from anywhere. Smart security apps send alerts to signal activity outside your home, giving you peace of mind.
- Smart Smoke and CO Sensor Apps: These apps have the ability to send alerts, conduct status checks and silence alarms – even when you're away.
- Smart Appliance Apps: App functionality depends on the appliance. Refrigerator cameras allow you to see what needs to be stocked (while grocery shopping!), and smart dryers can sense when electric use is high and turn off.
- Smart Lighting Apps: Control lighting options for individual rooms, adjust brightness and color, create lighting scenes based on mood – all from the convenience of your smartphone.





# INNOVATIVE

Carbon Test Center Opens at Basin Electric's Dry Fork Station

#### **Derrill Holly**

#### NRECA

Research getting under way at an electric co-op power plant in Wyoming could lead to game-changing breakthroughs diverting carbon dioxide from the power generation waste stream to manufacturing processes for use in new products.

"This is not a lab; it's a facility where testing will take place in 'real world' conditions," Gov. Matt Mead told an audience of about 150 attendees during a dedication ceremony for the Wyoming Integrated Test Center on May 16.

Mead's comments topped a nearly decade-long quest for creation and development of a facility designed to advance technologies that expand the use of CO2 as a marketable byproduct with commercial value.

#### **Bulk Waste to Useful Products**

The facility, which takes on its first tenants this summer, is located at Basin Electric Power Cooperative's Dry Fork Station. The 385-megawatt power plant commissioned in 2011 is one of the most modern coal-based generation facilities in the electric cooperative fleet.

Bismarck, North Dakota-based Basin Electric is majority owner and operator of the plant, which is co-owned by the Wyoming Municipal Power Agency.

With the encouragement of electric cooperative officials, including representatives of Basin Electric, Tri-State Generation and Transmission Association and NRECA, Wyoming legislators approved \$15 million for the project. The investment is seen as a way to preserve and support coal production as the state's top industry by reducing or eliminating concerns about CO2 emitted through fossil fuel use.

"This is about saving coal and making coal viable for America," says Paul Sukut, CEO of Basin Electric, adding that even as renewable energy and natural gas use expands, coal remains an abundant and reliable resource. "We need in America an 'all of the above' energy solution."

Emissions from up to 20 MW of energy production will be diverted to a ported vent system feeding five small test bays and one larger working facility at the ITC. Researchers will be able to draw CO2 from that waste stream for industri-

## ENERGY NEWS

al-scale production use.

The nonprofit XPRIZE Foundation, headquartered in Culver City, California, is using the Dry Fork Generation Station as one of two test sites for the NRG COSIA Carbon XPRIZE. Participants have been competing for a total of \$20 million in prize money since 2015.

Westminster, Colorado-based Tri-State G&T began developing the concept for a carbon inducement prize and test center eight years ago and has contributed \$5 million to the ITC project.

"Early on, we identified promising activity in the nascent field of carbon utilization and the need to provide venues for innovators to bring new technology forward," said Ellen Connor, Tri-State senior vice president and chief technology officer.

"The technology acceleration from the XPRIZE and creation of a test center at an operating coal plant will make an impact on both the speed and scale of development and demonstration of these important technologies," Connor said.

NRECA has also contributed \$1 million to development of the ITC in support of the association's commitment to a national energy policy recognizing electric generation diversity that includes fossil fuels and renewables.

"If there is a carbon constraint in the future, it's going to hit natural gas as well," says Jim Spiers, senior vice president of NRECA's Business and Technology Services department.

Spiers, formerly Tri-State's senior vice president of business strategies and chief technology officer, worked to identify institutions, companies and individuals committed to the carbon waste issue and found 135 entities worldwide are studying the issue.

According to the Energy Information Administration, coal-based electricity generation produced more than 1.2 million metric tons of CO2 in 2016. That number accounts for 68 percent of the total CO2 emissions from the energy sector.

Forty-one percent of the power used by electric cooperative members is produced through coal-based generation. Co-ops also rely heavily upon natural gas to operate peaking plants, run primarily

# This project is poised to crack the carbon code and create a new future for managing carbon dioxide emissions.

during periods of high demand.

"As co-ops across the nation work to meet tomorrow's energy needs, this project is poised to crack the carbon code and create a new future for managing carbon dioxide emissions," Spiers added. "The Wyoming ITC is proof that public-private partnerships spur innovation."

Facilities related to the ITC project now occupy 226,000 square feet of space at the Dry Fork site. While the five test bays used by the Carbon XPRIZE finalists will share access to flue gas produced by 1.5 MW of generation capacity, a separate large test center can use up to 18.5 MW of flue gas flow.

## **Promising Paths**

The 10 teams in the juried research competition designed to advance clean energy technologies are divided equally between the coal-based ITC test site and Canada's Shepard Energy Centre in Calgary, Alberta, where the Alberta Carbon Conversion Technology Centre is fueled by natural gas.

The five teams conducting research at ITC include:

- Breathe: Based in Bangalore, India, they will combine hydrogen compounds, extracted from water, with CO2 to produce methanol. Researchers will use a variety of catalysts, including copper, nitrogen and iron to gauge the economic viability of commercial scale production.
- C4X: The Suzhou, China-based team will use CO2 extracted from flue gas to develop new foam-based bio composite plastics for potential use as insulating and building materials.
- **Carbon Capture Machine:** The team, headquartered in Aberdeen, Scotland, will dissolve CO2 in a mixture of brine, calcium and magnesium to produce

carbonate solids as an additive for building materials, replacing other carbon-based feedstocks in the manufacture of concrete.

- CarbonCure: The team, led by researchers from Dartmouth, Canada, will use CO2 to produce materials described as "greener concrete" using current manufacturing processes and modified chemistry to reduce water and CO2 use in concrete fabrication.
- Carbon Upcycling UCLA: The Los Angeles-based team will attempt to scale up production of a concrete material that absorbs CO2 during the production process, bonding with limestone for use in construction.

Researchers working the natural gas track in Alberta will conduct production scale testing on plastics, concrete alternatives, new building compounds and nanoparticles for use in bioplastics and other products. The 10 semifinalists shared \$5 million awarded in April.

## **Beyond Research**

After 10 months of production, XPRIZE judges will consider factors including operational costs, total production and net reduction of CO2 waste as factors in awarding \$20 million in prize money. Winners from the two test sites will split the proceeds.

Kawasaki Heavy Industries, working with the Japan Coal Energy Center on a solid sorbent-based carbon capture technology, is the first tenant for the larger space at the ITC. Up to \$9 million will be spent on the project, which will use sorbent as a low-cost carrier to absorb CO2 for later use as manufacturing feedstocks.

"The work of JCOAL and Kawasaki, along with the other Carbon XPRIZE teams, positions the Wyoming ITC as a worldclass facility for testing carbon management technologies," said Mead.

"We continue to move the needle forward on advanced carbon technologies and find real-world solutions to capturing carbon emissions," said Jason Begger, executive director of the Wyoming Infrastructure Authority. While Basin continues to operate Dry Fork Station, the authority is serving as the managing entity for the ITC.

Derrill Holly is a staff writer for NRECA.

# SEE YOU THERE!

# Heading to the Fair or Fest?

# Stop by and see your co-op!

### Brenda Kleinjan

editor@sdrea.coop

Those attending county and state fairs in the region will likely find their local electric cooperative there as well!

Whether your August plans take you to Minnesota's FarmFest, South Dakota's DakotaFest, the Sioux Empire Fair, Brown County Fair, South Dakota State Fair or any of several other gatherings this month, be sure to check in with your local electric cooperative.

Those heading to FarmFest Aug. 7-9 near Morgan, Minn., will find Touchstone

Energy<sup>®</sup> Cooperatives in the large ag tent. At DakotaFest, visitors can stop in for the air-conditioned comfort of the Touchstone Energy<sup>®</sup> Cooperatives building on festival's second street. DakotaFest is held near Mitchell, S.D., each August. This year, the event is set for Aug. 21-23.

If you're in western South Dakota on Aug. 2, you will find Butte Electric Cooperative in Newell partnering with West River Cooperative Telephone of Bison to serve barbequed beef during the Butte County Fair in Nisland.

And, Black Hills Electric is making the rounds at area fairs when it serves dinner at the Fall River County Fair on Aug. 2 and then the Custer County Fair on Aug. 9.

Those heading to the Sioux Empire Fair in Sioux Falls in August will want to be sure to check out Ag Appreciation Day Aug. 8. Several cooperatives in the southeastern part of the state have tickets available for free admission and a free meal that day.

And, if experiencing the magic of the South Dakota State Fair is on your agenda for Aug. 30 to Sept. 3, be sure to visit the Touchstone Energy Cooperatives of South Dakota booth in the Expo Building throughout the week. Sign up for a drawing and visit co-op employees from across the state to learn about electrical safety, energy efficiency and more!





Find your local electric cooperative in the Expo Building on the fairgrounds all week!

We'll see you there!

Location: 1060 3rd St. SW, Huron, SD 57350



WHAT TO DO: IF YOUR CAR CRASHES INTO A UTILITY POLE

Accidents happen. Would you know what to do if your car crashed into an electric utility pole? Knowing what to do could be the difference between life and death.

Always consider power lines and other electrical equipment to be live and dangerous!

## IF A POWER LINE FALLS ON YOUR VEHICLE AND THERE IS NO FIRE:

Your safest option is to stay inside your vehicle until help arrives. The vehicle acts as a path for the electrical current to travel to reach the ground. You are safe inside the vehicle, but if you get out, you could be electrocuted.

Call 911 or your local electric utility for help.

### IF A POWER LINE FALLS ON YOUR VEHICLE AND THERE IS A FIRE:

Only attempt to leave your vehicle if it is on fire.

#### To exit safely:

- Jump out of the vehicle, making sure NO part of your body or clothing touches the ground and vehicle at the same time.
- Land with both feet together and in small, shuffling steps, move at least 40 ft. away from the vehicle.
- The ground could be energized. Shuffling away with both feet together decreases the risk of electrical shock.

Call 911 or your local electric utility for help.



#### July 20-21

Senior Games, Brookings, SD, Contact Traci Saugstad at 605-692-4492

#### July 20-21

Gumbo Ridge Bronc Ride and Ranch Rodeo, Murdo, SD, 605-669-3031

July 20-21 JazzFest, Sioux Falls, SD, 605-335-6101

#### July 20-21

Storybook Land Festival, Aberdeen, SD, 605-626-7015

#### July 20-22

Laura Ingalls Wilder Pageant, 8 p.m., Pageant Site, De Smet, SD, 800-880-3383

#### July 20-22

Annual Gem & Mineral Show, Rushmore Plaza Civic Center, Rapid City, SD, 605-269-2015

#### July 20-22

Stampede Rodeo, Burke, SD, 605-830-0304

#### July 21

Annual Heritage Music Fest, Elk Point, SD, 605-366-9466

#### July 21, Aug. 25, Sept. 8, 22

Lawn Mower Races, Pukwana, SD, 605-680-1718 or 605-682-9781

#### July 21-22

41st Annual Festival in the Park, Spearfish, SD, 605-642-7973

#### July 25

Stockyard Ag Experience – Local Foods Fair, 3 to 8 p.m., Free, Sioux Falls, SD, Contact 701-883-4304

#### July 28

Growing Ancient Grains and Greenhouse Tomato Tours, Local Foods Potluck, 1 to 5 p.m., Free, Bring a dish to share, Newell, SD, 605-681-6793

#### August 3-4

Senior Games, Yankton, SD, Contact Kristi Hauer at 605-665-4685 or Brittany Orr 605-668-5238

#### August 4

Growing Nuts and Hops Tours, 9 a.m. to 5 p.m., Free, Food truck offering meals for sale, Yankton, SD, 605-681-6793 or SDSPAinfo@gmail.com

#### August 10-11

Senior Games, Huron, SD, Contact Laron Clock at 605-353-8533

#### August 18-19

Annual Threshing Bee, Rosholt, SD, 605-537-4426 August 2-5: 33rd Annual Oglala Lakota Nation Wacipi Rodeo Fair, Pow Wow Grounds, Pine Ridge, SD, 605-867-8420

#### August 19

Small-Scale Farming and Honey Extraction Tours, 9 a.m. to 3 p.m., Free, \$12 meal available, must pre-register, Belle Fourche and St. Onge, SD, 605-681-6793 or SDSPAinfo@gmail.com

#### August 23-25

Senior Games, Watertown, SD, Contact Jeremy Herrboldt or Josh Maag at 605-882-6260

#### August 23-26

56th Annual Steam Threshing Jamboree featuring the Minneapolis Moline National Show, Prairie Village, Madison, SD, 800-693-3644

#### August 25

McCrossan Boys Ranch Xtreme Event Rodeo, 4:30 p.m. - Pre-show entertainment, 5:30 p.m. -Rodeo Show, McCrossan Boys Ranch Campus, 605-339-1203 www.mccrossan.org Value Added Ag Day and Specialty Crop Workshops at the State Fair, SD Value Added Ag Development Center and SD Specialty Producers, Huron, SD, 605-681-6793 or SDSPAinfo@gmail.com

#### September 6-9

Senior State Games, Sioux Falls, SD, Howard Bich at 605-491-0635 or visit southdakotaseniorgames.org

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.