

Cooperative Connections

A photograph of two men in a control room. The man in the foreground is wearing glasses and a blue and green plaid shirt, holding a black telephone receiver. The man in the background is wearing a red and white plaid shirt and glasses, pointing at a computer monitor. The room is filled with multiple computer monitors displaying various data and charts.

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as extreme winter
weather brings up
concerns over power
supply and demand**

Member Update



Matt Hotzler

Manager
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I can assure you...nobody gets into the electric utility business to shut power off. We all work too hard for reliable energy; we are out at all hours and weather conditions to restore outages.

You probably heard by now about the energy emergency the nation's electric systems had during their unprecedented cold spell in mid-February. Or maybe you heard about power cooperatives/companies with rolling blackouts up in this area. Maybe you heard about some folks in Texas who were getting monthly residential electric bills of over \$10,000 for that cold spell when they are normally around \$120. That begs to ask the questions: What happened? Why was it so expensive? Could this happen to us?

Let me step back to explain where H-D Electric Cooperative sits in all of this. H-D Electric is a distribution cooperative owned by you – its members! H-D Electric gets electricity from East River Electric Power Cooperative who transports power on transmission lines to their substations where we pick up the power to deliver to you. East River purchases hydropower from WAPA (Western Area Power Administration) and Basin Electric Power Cooperative supplies the rest. Basin Electric owns a variety of types of generation including wind, gas, oil, and waste heat and owns about 2500 miles of a high-voltage transmission line. The SPP (Southwest Power Pool) is a Regional Transmission Organization (RTO) that coordinates the generation and transmission system in 14 states from North Dakota to Northern Texas. WAPA and Basin joined SPP putting their joint transmission system into the SPP in 2015 after much discussion, including with Basin members like H-D Electric. The RTO membership was needed to have access to buy and sell our power generation needs and the ability to transport the energy. SPP was decided the best fit. Overall, this has been a great decision for Basin and East River and their members like H-D Electric. It has allowed us to buy power from others when prices are lower than Basin generation costs and a market to sell when Basin can generate extra.

So, what happened? While I do not know exactly what happened in Texas and there will certainly be many studies and investigations to find out exactly what happened. Most likely they will figure out it was several things that contributed to high prices and blackouts. Much of the Texas grid is operated by an entity similar to the SPP, the Electric Reliability Council of Texas (ERCOT). Texas allows for an open choice as to where to buy retail power. Instead of having all packaged together from a single utility, consumers can buy energy separately from who delivers. Some of those energy retailers could be completely exposed to the market price (instead of like us with Basin Electric having generation). So, when the demand for energy in ERCOT

exceeded the generation available the price eventually hit the ERCOT market maximum of \$9,000 per MWh which equals \$9/kWh. For a point of reference, for H-D Electric last year, the total energy revenue divided by kWh's sold was 10.8 cents/kWh. Whatever an electric retailer pays gets passed through to their customers. Hence the expensive power bills. While reports do not indicate that high of prices in SPP they were much, much higher than normal. But since Basin owns generators to supply our power and those units were running, H-D Electric was insulated from the effects of the high costs.

Since demand exceeded the generation capacity, Texas needed blackouts to match the demand with the generation to avoid a complete collapse of the system. That is how the system works, there is not any storage but rather real-time use and real-time generation. So now back to SPP and H-D Electric. The SPP also experienced a shortage that required them to call an energy emergency alert level 3, which they had never even called a level 2 before this event. Those emergency alerts occur when generations and reserves are lower than demand. So, if a line or unit tripped off it could cascade to lose the entire system. That is when the cooperatives put out the call for members to reduce load and we ran every bit of load control we could through East River. Despite these measures, WAPA had to cut the energy load in this area and they had to act fast without notice to preserve the system from total collapse. This caused rolling blackouts in the area, intending to have them off for 45 to 60 minutes then moving to other substations. Although H-D Electric did not have any substations subject to those blackouts if they had continued, we most certainly would have them roll through ours as well. While this would have been inconvenient this was necessary to prevent the SPP system from collapse. If it had collapsed it could take many hours or days to fully restore. I can assure you from distribution to transmission to generation to RTO, nobody gets into the electric utility business to shut power off. We all work too hard for reliable energy; we are out at all hours and weather conditions to restore outages. So, this was a difficult day for those having to turn the power off and for us anticipating it might happen to H-D members.

Why was it so expensive? With not enough generation to supply the demand. Like I said earlier, most likely several factors contributed to the high prices. Those factors could include environmental conditions such as lack of wind or solar to generate renewables sources and unusually low temperatures

H-D Electric Cooperative Connections

(USPS No. 018-905)

General Manager: Matt Hotzler

Headquarters Employees

- Annie Aberle - Finance and Administration Manager
- Michelle Prins - Billing Clerk
- Heidi Brewer-Grimlie - Accounting Clerk
- Roger Cutshaw - Engineer
- Darren Matthies - Building Property Worker

Operations

- Troy Kwasniewski - Operations Manager
- Todd Sprang - Line Foreman
- Line Crew
- Pat Kirby - Operations Support
- Joe Raml - Lead Lineworker
- Cody Scarrott - Lineworker
- Derek Bille - Lineworker
- Kevin Holida - Lead Lineworker
- Matt Miller - Equipment Operator/Mechanic
- Eric Page - Apprentice Lineworker

Member Services

- Tom Lundberg - Member Services Manager
- Erik Eversman - Electrician
- Noah Reichling - Electrician
- Rick Shea - Electrician

Board of Directors

- President Bert Rogness - Astoria
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- Casper Niemann - Lake Norden
- Kevin DeBoer - Clear Lake
- Laurie Seefeldt - Revillo
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in a large footprint. Other factors include high natural gas market prices due to high demand for home heating use or lack of natural gas pipelines causing delivery constraints or curtailments for gas generation stations. Other factors might be power plants offline either scheduled or non-scheduled or the lack of coal baseload generation because of how it is viewed environmentally. All of these factors most likely helped aid in the shortage of energy and high market prices.

Could something like this happen to us? Certainly, we could have been exposed to rolling blackouts as many in our area were. Complete blackouts have occurred throughout the U.S. in the past that why a team of folks work hard to keep a reliable and strong grid 24/7/365. As for costs, our cooperative works together with East River and Basin Electric to share risk and avoid fluctuations in the energy market like seen in Texas. Energy brokers can be exposed to fluctuations in the markets and consumers pay the price. This is why a co-op should be part of an organization that owns generation and transmission which can help shield you, our member-owners, against high market prices. H-D Electric members would have to have a whole lot more go wrong before being exposed to the excessive costs. That is the power of being connected to a cooperative power supply.

It is also particularly important to keep our politicians informed of the fact that we need an all-of-the-above approach to providing reliable electricity generation in our country, including coal, natural gas, nuclear, renewables, and hydroelectric power. We do not ever want these types of situations to become common because we have, as policy, eliminated baseload generation.

Finally, thank you to those who endured longer load control times for a few days and curtailed your usage during the energy emergency, your reduction may have been the difference of having to go to a rolling blackout for a longer time.

Just a reminder the H-D Electric annual meeting is coming up on Tuesday, March 23, 2021, at 6:30 p.m., registration, 7 p.m., meeting start. Hope to see you there! Please do not attend if you are feeling ill!

Mark Your Calendar!

Attend H-D Electric's annual meeting Tuesday, March 23, 2021

H-D Electric Headquarters
18240 SD HWY 15
Clear Lake, S.D. 57226

Registration begins at 6:30 p.m.

H-D Electric's annual meeting will begin at 7 p.m.

Statistical Report

	January 2020	January 2021
Customers	3,655	3,715
Amount Collected	\$1,093,320	\$1,081,769
Average Bill	\$299.13	\$291.19
Average Kilowatt-Hour	3,102	2,951
Kilowatt-Hours Purchased	12,270,290	11,315,673
Kilowatt-Hours Sold	11,338,567	10,964,243

Home Improvements Don't Have to be Expensive

You don't have to replace your air conditioner with a high-efficiency system or make other major improvements to reduce energy consumption. There are low-cost efficiencies anyone can implement to help reduce energy bills.

- **Mind the thermostat.** You might be able to trim your energy bill by carefully managing the temperature in your home. Consider setting your thermostat to 78 degrees when you're running the air conditioner. If that's not cool enough, use fans to help circulate the air to help you feel cooler.
- **Go programmable.** If you don't always remember to adjust your thermostat manually, you could benefit from a programmable model. In the right situation and set correctly, programmable thermostats can save your household \$150 a year. Some models can be managed from your smartphone or other devices.
- **Stop air leaks.** Small gaps around windows, doors, wiring and plumbing penetrations can be major sources of energy loss. This problem can be alleviated with a little weatherstripping and caulk. A \$10 door draft stopper (also known as a "door snake") is a simple way to block gaps underneath exterior doors. Sealing air leaks around your home could shave up to one-fifth off your heating and cooling bills.
- **Manage your windows and window coverings.** Your windows may be letting heat out during the winter and letting heat in during the summer. Window coverings like medium or heavyweight curtains and thermal blinds can help. During the summer, keep window coverings closed to block the sun and keep it from heating conditioned indoor air. On cooler spring days, turn off your air conditioner, open the windows and enjoy the breeze - and lower electricity bills.
- **Look for energy wasters.** There are small steps you can take every day to reduce your energy use. Water heaters should be kept at the warm setting (120 degrees). Wash dishes and clothes on the most economical settings that will do the job, and always wash full loads. Use the microwave instead of the oven when possible. And unplug phone chargers, electronics and small appliances when not in use.

A Note of Appreciation for the Service Co-ops Provide

By Mark Peacock, Dupree

Most of us wake up each day with an agenda and a schedule that ensures we do things in pretty much the same way from the moment we open our eyes to the moment we arrive at wherever it is we spend our day working.

But on those rare occasions when I walk through our warm home and turn on the bathroom light, which in our home has an overhead radiant heat lamp, and start the shower, which releases hot water from the water heater nestled in the basement, I sometimes take a brief pause in my routine.

I pause to feel the heat of the water wash over me...if only for a minute or so, to enjoy and appreciate what a wonderful experience having a hot shower in a well-warmed, well-lit bathroom in a very comfortable home represents. It means I live in a country and in a state and in a county that has invested in the infrastructure and made a commitment to allowing normal, everyday Americans the opportunity to enjoy such a treat in the middle of a South Dakota winter.

And I smile, because we may not get all we want in life, but we may, for a brief moment, feel all the warmth it takes to start off the day in a positive way. Thank you and your energy partners for making my day and the days of thousands of others begin just a little better, a little bit warmer, a little bit brighter, and a whole lot more optimistic.

KIDS CORNER SAFETY POSTER



Stay Indoors During a Storm

Celeste Meyer, 6 years old

Celeste is the daughter of Brice and Sarah Meyer. She is a resident of Trent and a member of Sioux Valley Electric.

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.

Slushes, Punches, Lattes

Fruit Slush

- 1 6-oz. can orange juice concentrate
- 1 6-oz. can lemonade concentrate
- 3 or 4 juice cans water
- 2 20-oz. cans crushed pineapple with juice
- 1/3 cup halved maraschino cherries with juice
- 2 firm bananas, sliced
- 2 10-oz. boxes frozen strawberries, thawed

Stir all ingredients together and freeze in 9 x 13 inch pan or ice cream bucket. Remove from freezer a few minutes before serving. To serve, put scoop of slush in glass and fill glass with 7-Up or Squirt.

Mary Jessen, Holabird

Banana Slush Punch

- 7-8 bananas
- 2 12-oz. cans of orange juice concentrate
- 1 12-oz. can of lemonade
- concentrate
- 1 46-oz. can of pineapple juice

Blend bananas with all ingredients above. Bring to boil 6 cups water and 3 cups sugar. Cool. Combine banana mixture with sugar water. Freeze. At the time of serving, mixture should be slushy. Add two 2-liter bottles of Sprite or Fresca to the banana/water mixture and serve.

Julie Hummel, Hawarden, IA

Seasonal Punch

- 12-oz. can frozen orange juice
- 12-oz. can Frozen Lemonade
- 4 pkgs. Koolade, any flavor
- 4 quarts water
- 3-3/4 cups sugar
- 2 Liters 7-Up (or Diet 7-Up)

Mix orange juice, lemonade, Koolade, water and sugar, store in fridge to keep cold. Also refrigerate the 2 liters of 7-Up. Prior to serving - pour in the 2 liter of 7-Up and gently stir to mix. You can use any color Koolade, maybe green for Easter, red for 4th of July, Labor Day and Christmas, and orange for Halloween. Refreshing punch goes well with meals or anytime of day.

Pam Conn, Sioux Falls

Spiced Cocoa Mix

- 1/4 cup cocoa
- 1 cup powdered sugar
- 2 cups nonfat dry milk powder
- 1/2 cup nondairy powdered creamer
- 3/4 tsp. cinnamon
- 1/2 tsp. nutmeg

Sift powdered sugar and cocoa together. Add remaining ingredients. Mix well. For each serving, use 1/3 cup mix and 3/4 cup boiling water. Stir. May add a teaspoon of coffee crystals, a dollop of whipped cream, or a teaspoon of liquid flavored coffee creamer.

Elaine Rowett, Sturgis

Creamy Hot Chocolate

- 1/2 cup dry baking cocoa
- 14-oz. can sweetened condensed milk
- 1/8 tsp salt
- 7-1/2 cups water
- 1-1/2 tsp vanilla

Mix cocoa, milk, salt into a crock pot. Add water gradually, stirring into smooth. Cover and cook on high 2 hours, or low 4 hours. Stir in vanilla before serving.

Melissa Roerig, Sioux Falls

Chocolate Latte

- 1/2 cup hot brewed coffee or 2 shots espresso
- 1 Premier Protein 30g High Protein Chocolate Shake
- 2 teaspoons cocoa nibs

In large 14-16-oz. mug, prepare espresso or coffee. Pour chocolate shake on top to combine. Top with cocoa nibs.

www.premierprotein.com

Please send your favorite casserole 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 2021. All entries must include your name, mailing address, telephone number and cooperative name.

Three Options for Home Cooling



Pat Keegan

Collaborative Efficiency

Whatever you choose, make sure it is rated for the size of the space you are cooling.

Pat Keegan and Brad Thiessen of Collaborative Efficiency write on energy efficiency topics for the National Rural Electric Cooperative Association, the national trade association representing more than 900 local electric cooperatives. From growing suburbs to remote farming communities, electric co-ops serve as engines of economic development for 42 million Americans across 56% of the nation's landscape. For additional energy tips and information on Collaborative Efficiency visit: www.collaborativeefficiency.com/energytips.

Dear Pat and Brad: My wife and I have been in our 1,500 square-foot home with no air conditioning for 10 years now, and we're tired of it! What options should we look into so we can stay cool this summer? – Kyle

Dear Kyle: It's the right time of year to think about how to stay cool this summer. There are a few low- and no-cost cooling strategies, like using ceiling fans to keep air moving, turning off unused electrical devices and appliances, and blocking direct sunlight with window coverings. If you live in a climate with cool summer evenings, you can let cool air in late at night or early in the morning, then seal up the home to keep that air from leaking out.

If that's not enough, you can install air conditioning (A/C). Below are three common options for home cooling, and we've included approximate cost estimates for each. But please be aware that costs are highly variable.

Window Units/Portable Cooling

Window A/C units or portable A/C units are the lowest cost approach. Portable units can be moved from room to room and come equipped with a length of duct to exhaust hot air out a nearby window. Window units are mounted in a window opening and cool one room. The efficiency of portable and window units has improved over the years, but none of them are as efficient as most central A/C units or a mini-split heat pump.

If you live in a hot, dry climate, you could consider an evaporative cooler for your home (sometimes referred to as a swamp cooler). Window units have been around for a while, but now there are portable options available. Evaporative cooling units can be less expensive than traditional A/C, but don't buy one until you do the research to determine how well evaporative cooling works in your local area. Whatever you choose, make sure it is rated for the size of the space you are cooling.

- Cost: \$149 to \$1,000 per new unit (depending on your climate and how many square feet you're trying to cool)

Ductless Mini-Split Heat Pumps

A ductless mini-split heat pump has a compressor outside the home that's connected to air handler units in as many as four rooms. Each room's temperature can be controlled separately. Ductless mini-splits are an especially good choice for homes without forced air ducting systems or with leaky or undersized ductwork. Heat pumps can also be a supplemental source of heat in the winter months.

- Cost: approximately \$3,000 to \$10,000 (including installation)

Central Cooling

If your home has forced air heating ductwork, it can be used for an A/C or heat pump unit. This is a good option if the ductwork is sized properly and doesn't leak, and if ducts are in unheated attics or crawlspaces that are insulated. In some locations in the U.S., contractors can install evaporative cooling as a whole house system.

- Cost: Approximately \$3,000 to \$7,000 (not including repairs to ductwork)

As always, you can save energy and money by purchasing ENERGY STAR®-rated appliances and collecting a few quotes from licensed contractors.

We hope this information on home cooling options will start you on the path to a more comfortable home this summer.

Hit Movie Nomadland Captures the Beauty and Character of South Dakota

Billy Gibson

billy.gibson@sdrea.coop

Any day now, I-90 is due for yet another Wall Drug billboard to add to the legendary collection.

The popular tourist attraction was one of several spots in the state of South Dakota featured in the hit film *Nomadland*. And for Wall Drug owner Rick Husted, that's more than enough to warrant another interstate billboard celebrating the restaurant's role in the award-winning Hollywood hit.

During the three-day stretch in 2018 that the film crew worked in Wall, no one knew the project would gain such high critical acclaim. But since its premier at the Venice Film Festival last September, *Nomadland* has collected numerous awards and loads of recognition from many quarters, beginning with the Golden Lion Award at Venice. In January, the North Dakota Film Society Awards handed *Nomadland* nods for best picture, best director, best actress, best cinematography and best editing.

Husted was just happy that Wall Drug was picked to be part of the film, and his wife Pat was even happier to meet one of her Hollywood heroes, Frances McDormand. Pat got to spend time getting to know McDormand during the shooting and even accepted a pair of potholders that the Tinseltown star hand-crafted herself.

"There was just a lot of excitement during that time," Husted remembers. "We tried to do everything we could to accommodate them, everything but shut the store down. They filmed while there were customers in the restaurant and that made it very realistic. But the director, the actors, the crew, they all could not have been more pleasant to work with."

Husted said that after he was initially approached by producers, he had to keep the project secret so that the restaurant wouldn't be overrun by curious onlookers. The actors integrated into the environment easily by donning Wall Drug uniforms and



Actress Frances McDormand shoots a scene inside Wall Drug for the critically-acclaimed movie *Nomadland*.

paper hats while waiting on customers who often didn't know they were interacting with Hollywood stars.

In the movie, McDormand plays a middle-age woman who faces a drastic change in her life and adopts a nomadic culture, joining the ranks of those who travel from place to place to make a living while meeting lots of interesting people



Filming took place at various sites including Wall, the Badlands, Custer State Park and the Pine Ridge Reservation.

and forging close relationships in the process. As the movie shows, the "nomads" also learn a lot about themselves along the way.

Husted said the movie's plot also fits in well with reality as he sometimes hires itinerant workers during certain seasons, workers who go on to harvest sugar beets in the fall or sign on with Amazon during the Christmas buying season.

Some of the local citizens even made an

appearance in the film. Carol Ann Hodge and Sue Michaels are two who got past the editing cut and are part of a scene in which McDormand's character encounters the two women in a local park.

Husted was particularly impressed with director Chloe Zhao. The up-and-coming young director had completed two other movies, *The Rider* and *Songs My Brother Taught Me*, that caught the attention of the Hollywood establishment. Parts of those films were also shot in South Dakota. Zhao lived with the Lakota Sioux on the Pine Ridge Reservation to prepare for *The Rider*, while *Songs My Brother Taught Me* was filmed partially on a South Dakota reservation.

"It was unbelievable for us to have a famous young director here and several known movie stars," Husted said. "They're very competent, organized, focused and know exactly what they're doing. But at the same time, they were very down to earth and warm and friendly."

Husted always encourages his staff to play it cool when celebrities occasionally wander off the interstate and into the store. He recalls that Ernest Hemingway once stayed in one of the Wall Drug cabins and invited his parents to join him for dinner.

"We've had famous people come through over the years but we want them to experience Wall Drug like everyone else," he said. "We want to be professional. We want them to have a good time and we give them their space."



A peek inside the Southwest Power Pool control room shows system operators working to make sure power supply always matches demand across 14 states on the grid. Photo provided by SPP.

AN ENERGY EMERGENCY

Why Did February Outages Happen and Could They Happen Again?

Billy Gibson

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The national power grid has been hailed as one of the greatest and most complex engineering feats ever achieved. Every second of every day it works to keep electricity flowing freely to homes, schools, farms, hospitals and businesses in every region of the country.

But while it stands as one of mankind's most marvelous inventions, sometimes it's simply no match for Mother Nature.

This electric superhighway was put to the test in mid-February when a bone-chilling air mass swept through large swaths of the country and caused a spike in the demand for power. As the temperatures dropped, millions of Americans attempted to stave off the frigid air by reaching for electric blankets, plugging in space heaters and nudging their thermostats up a few notches. With so many people clamoring to stay warm, the sudden spike in demand for power caused the gatekeepers of the grid to reach their option of last resort: ordering temporary disruptions in service to maintain the delicate balance between demand and supply that's required to keep the network from completely melting down.

The result was several waves of controlled and coordinated rolling blackouts often spanning one hour and isolated incidents of up to three hours for some consumers. The service interruptions impacted nearly one-third of the nation. Industry officials explain that this response to skyrocketing demand was necessary to keep the grid from sustaining extensive damage and causing a repeat of the historic event that occurred in the summer of 2003. The Northeast Blackout extended across the eastern seaboard, through parts of the Midwest and into southern Canada and left approximately 50 million in the dark.

"Controlled outages are necessary to prevent widespread damage to the grid, which could cause a cascade of outages that could potentially be far more devastating," explained Barbara Sugg, CEO of the Southwest Power Pool (SPP). "There's no doubt this would have been a much more significant event if our individual customers and businesses and industries had not all pulled together to reduce the load."

Air Traffic Controllers for the Grid

Sugg describes her organization as an "air traffic controller" for the grid. In fact, the SPP is what's known in the electric utility industry as a Regional Transmission Organization (RTO). It's one of the four quasi-government entities responsible for maintaining the critical balance between supply and demand along the nation's power grid. While RTOs don't create or generate power, they are charged under the Federal Energy Regulatory Commission (FERC) with the task of making sure the power produced by other utilities flows smoothly across the grid and gets to the places where consumers need it, when they need it.

SPP is the power transmission overseer for 14 states - including South Dakota - and more than 17 million people in the midsection of the U.S. from North Dakota to the Texas Panhandle. Electric co-ops in South Dakota are also part of the Western Area Power Administration (WAPA), a federal agency that markets power produced from hydroelectric dams in the Upper Midwest. It operates the larger bulk transmission facilities in 15 central and western states in its geographical footprint.

Most of the time the high-voltage transmission process operates without a hitch, and electric generation can be moved across the grid when there is high demand in one area and excess generation in another. But when foul weather comes into the picture grid operators focus on activating their emergency response plans. Those plans typically include communicating with generators to coordinate arrangements for assuring that an ample supply of power will be available to meet projected demand when the inclement weather strikes.

Lanny Nickell, operations manager for SPP, points out that while arrangements were in place to face the February cold snap, the winter blast turned out to be an unprecedented event for the organization. As the temperatures dropped, SPP initiated the process of contacting power generators and transmitters to warn that the looming storm may cause the system to be severely strained. Six days later, SPP officials went

through a series of three Energy Emergency Alert levels and eventually declared a Level 3 emergency, which required “controlled interruptions of service,” or rolling blackouts. It was the first time in the SPP’s 80 years that a Level 3 emergency was declared.

“Despite our plans, the severe weather coupled with a limited fuel supply hampered our ability to balance our supply with the demand from end-use consumers,” Nickell said. “So, first we had to go out and ask for a voluntary reduction in energy use. Then, we held off as long as we could to make the call to interrupt service in a controlled fashion, but it was necessary to prevent overloading the system and causing an even bigger problem and much longer outages.”

Nickell explained that without an affordable and viable means of storing high-voltage electricity for future use, power is created in one location and consumed in another location in real time. The balance must be maintained even though both supply and consumption change on a second-by-second basis.

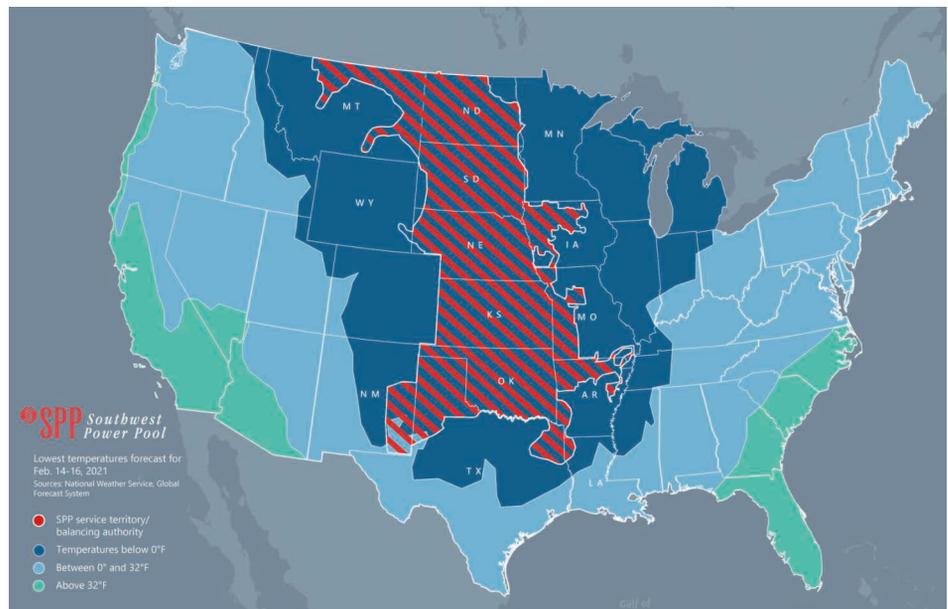
“Once we observe an imbalance, we have to react within seconds to reduce the demand,” Nickell said. “This is why it’s very difficult for us to announce well beforehand when these things will happen because they happen at the speed of light.”

A Smorgasbord of Fuel Sources

Interruptions in service are more than minor inconveniences for many co-op members, especially when severe weather conditions are in play. The February storm and the ensuing service outages triggered wide-ranging discussions about the push toward renewable resources to generate electricity.

Supporters of fossil fuels point out that decades-long efforts to curb coal and natural gas played a part in restricting the kinds of available resources that could have prevented widespread outages. Coal has long been a reliable source of “baseload power” requirements, or the amount of power necessary to provide an adequate supply to meet basic needs without interruption. It’s utilized largely because it can be more easily controlled compared to intermittent sources. Advocates emphasize that wind turbines were frozen in place and solar panels were buried in snow and limited by scarce sunlight during this event.

Renewable fuel source proponents echoed SPP officials in noting that the February storm was an historic occurrence. They contend that renewable power promotes a cleaner environment, decreases energy reliance on other countries, adds jobs to the economy and that innovations in the emerging industry



could be effective in responding to any future storms. Presently, roughly 25 percent of South Dakota’s overall energy supply comes from wind turbines. For electric co-ops, that figure is closer to 20 percent. Proponents of wind also point to issues with natural gas delivery and the inability of some fossil fuel plants to produce electricity through the storm. A combination of high demand, lower-than-normal wind resources and natural gas delivery problems all met at the same time to contribute to the energy emergency.

As for those members of RTOs who receive the call to actually implement controlled outages - particularly transmission and distribution cooperatives - there are very few options available when demand begins to significantly outpace supply on the grid.

Chris Studer is chief member and public relations officer for East River Electric, a co-op that provides transmission and substation services for distribution entities in South Dakota and Minnesota. He said the cooperative’s hands are essentially tied when SPP reaches the point of calling for rolling outages.

“The utilities involved in the SPP are required to carry a surplus of generation resources throughout the year over and above their historic peak demand so they are prepared for extreme circumstances. However, when wind resources and other generation are constrained, there is a limited amount of other generation available to serve the region’s recent record demand for electricity,” he said.

Distribution co-ops find they have even less control when RTOs and power marketing agencies restrict the flow of power, but they still find ways to mitigate the situation. Officials at West River Electric based in Wall, implemented

“Once we observe an imbalance, we have to react within seconds to reduce the demand. This is why it’s very difficult for us to announce well beforehand when these things will happen because they happen at the speed of light.”

- Lanny Nickell, SPP

the co-op’s load management program after receiving the request for reduced demand hoping it would be enough. But it was not, and some of the co-op’s members were subject to a 50-minute unplanned blackout. CEO Dick Johnson said he had never experienced a similar event in his 27 years in the industry. He added that he hopes the emergency situation prompts discussions centered around policy proposals that will prevent future emergencies.

“I think we should have a national conversation that includes large new baseload generation, whether that be hydroelectric, nuclear or carbon capture on coal plants. We must also have a conversation about building necessary electric and gas transmission infrastructure to allow us to get electricity and gas to the places where it is needed when times like this happen. If not, I am afraid it will happen again in the future, only more frequently.”

H-D Electric Yard Light Program

H-D Electric has been installing yard lights for its members since the cooperative began. Having lights to light up our yards is something that we all appreciate. H-D Electric repairs yard lights as a service to our members.

There are two types of programs that H-D offers to our members.

- 1) Rental yard lights are mounted on H-D Electric's primary line pole only. Members are billed a monthly rental charge on their energy account. There is no cost to repair or replace a rental yard light. All rental yard lights installed or replaced will be LED lights.
- 2) Non-rental yard lights can be mounted on any buildings, poles or H-D Electric's meter pole in the member's yard. All new yard light installations will be LED lights. The retail cost for an LED yard light is \$200. If this is a new installation, additional costs will apply for a pole or wire if needed. Repairs for non-rental yard lights will be retail cost of replacement parts only.

Life expectancy for an LED light is about 20 years with a 10-year warranty and has a savings of approximately \$30 a year.

Give us a call if you have any questions or are interested in purchasing a new LED yard light or to replace an existing yard light.

H-D Electric Hires Apprentice Lineman Eric Page

H-D Electric welcomes Eric Page as our newest full-time apprentice lineman. Eric worked for H-D Electric temporarily in 2019 as an electrical helper. He then came back to work for H-D Electric again in October 2020, and on Jan. 27, Eric was hired full-time as an apprentice lineman. He is a graduate of Mitchell Technical Institute's power line construction and maintenance program.

Eric grew up in Webster, S.D. His favorite hobbies are hunting and fishing – particularly ice fishing. He enjoys going to the lake in the summer and spending time with friends and family. He volunteers time with his church to paint houses and other activities. He also enjoys playing bags, throwing darts and bowling.



Got power? Thank an electric lineworker.

Lineworker Appreciation Day is Monday, April 12!

Touchstone Energy[®] Cooperatives

WHAT CAN YOU DO WITH \$1 WORTH OF ELECTRICITY?

Based on 12.85¢ per kWh

- WASH 16 LOADS OF LAUNDRY ON COLD
- RUN A CEILING FAN FOR 9 DAYS
- KEEP A LED LIGHT ON FOR 600 HOURS
- SPEND 30 HOURS ON YOUR COMPUTER
- CHARGE A CELL PHONE FOR 1,550 HOURS
- RUN A REFRIGERATOR FOR 5 DAYS
- WATCH TV FOR 55 HOURS ON YOUR 42" TV

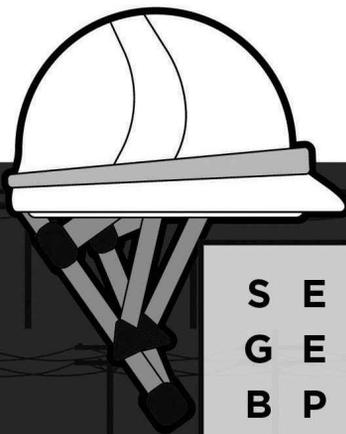
LINEWORKER GEAR WORD SEARCH



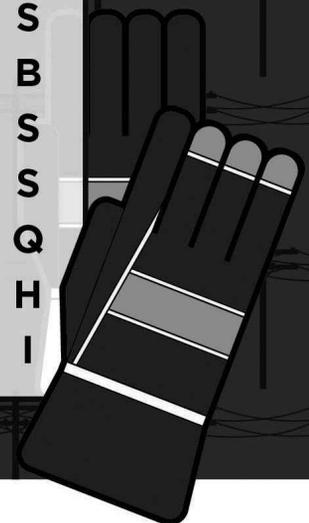
Did you know lineworkers wear special protective gear to keep them safe while working on power lines and other electrical equipment?

Read the descriptions to learn about a lineworker's gear and find the **bolded words** in the puzzle below.

- **Safety goggles** keep debris away from lineworkers' eyes while on the job.
- **Hard hats** protect lineworkers from head injuries and falling debris.
- **Work boots** provide extra protection while lineworkers work with heavy materials that could fall near their feet.
- **Flame-resistant** clothing keeps lineworkers safe from electrical hazards.
- **Insulated gloves** protect lineworkers from electrical shock while working on power lines.
- **Equipment belts** hold several tools that lineworkers need to get the job done.



S	E	E	X	H	M	D	T	V	H	E	Z	N	P	S
G	E	A	A	U	H	J	N	P	G	I	E	V	T	H
B	P	V	T	K	T	Q	A	J	J	Q	X	L	Z	A
S	G	D	O	G	F	A	T	L	Z	H	E	D	I	R
R	I	Z	F	L	G	G	S	W	H	B	H	G	O	D
F	V	X	Y	Z	G	W	I	X	T	R	W	M	Q	H
V	L	P	A	B	W	D	S	N	D	W	L	K	O	A
D	Y	A	O	X	T	O	E	P	C	Y	Y	H	R	T
O	H	X	Y	Q	R	M	R	T	G	M	G	J	X	S
X	M	T	V	B	P	H	E	K	A	J	U	X	Z	B
P	Y	N	L	I	U	S	M	K	B	L	N	N	T	S
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S	A	F	E	T	Y	G	O	G	G	L	E	S	S	I





This electric vehicle owned by Sioux Valley Energy is used as a fleet vehicle for the cooperative but also serves to educate members about EV technology and performance.

Electric Vehicles in SD

Electric Co-ops Working to Build Fast Charging Stations

Billy Gibson

billy.gibson@sdrea.coop

General Motors turned a lot of heads earlier this year when the auto industry titan announced its intention to phase out all gas and diesel engines by 2035. GM made sure its message was loud and clear by running ads during the Super Bowl.

Not to be outdone, Ford CEO Jim Farley soon followed suit by announcing the company's plans to invest \$29 billion in the development of autonomous vehicles (AVs) and electric vehicles (EVs) by 2025. And against a backdrop of companies like Tesla and Workhorse seeing triple-digit stock gains, President Joe Biden rolled out plans to turn the entire 650,000-vehicle federal government fleet to all electric.

With a solid upward trend in support of E-mobility and electric vehicles sweeping the globe, electric cooperatives throughout the region are doing their part to provide the power those vehicles will need to carry their passengers from Point A to Point B.

According to Ben Pierson, manager of beneficial electrification at Sioux Valley

Energy, the state's electric cooperatives are facing a chicken-and-egg proposition in deciding whether - and how much - to invest in an industry that's still in its early stages. Pierson has been involved in rallying support for the formation of a DC fast charging network that will make it easy for EV drivers to navigate across and throughout the state. The stations will be placed 75-100 miles apart but will have to be constructed before the demand is fully materialized. He has received interest from groups representing tourism, economic development, transportation and state government.

Pierson has been working with municipal and investor-owned utilities to build out the infrastructure, with an emphasis on making sure there are enough charging stations along I-90 to get travelers from one side of the state to the other with confidence. Stations will also be installed along the I-29 corridor in Brookings and Watertown in Phase 1, with plans to include a station in Vermillion as part of Phase 2. Pierson points out that "range anxiety" is a major obstacle for consumers and early adopters who are considering the purchase of an EV. Presently, EVs

make up less than 1 percent of the total U.S. vehicle fleet while 10 percent of the vehicles sold in Europe last December were pure electric.

A recent study by the Energy Policy Institute at the University of Chicago indicated that EVs are driven about half the distance - an average of 5,300 miles a year - compared to conventional internal combustion engine vehicles. One conclusion taken from the study is that EV owners see those vehicles as complements to their transportation needs instead of a replacement for their conventional cars.

"When industry giants like Ford and GM are making a commitment to electric vehicles, that's a huge indicator that EVs are more than just a passing fad and are something we should invest in," Pierson said. "But like any industry transformation, it can be a frightening proposition for people to experience a paradigm shift like this. With our members in mind, we're committed to staying out ahead of the wave and doing what we can to make sure the power delivery infrastructure is in place when the other pieces and parts of the total picture emerge."

DC Fast Charging Infrastructure Plan



Utilities are in the process of conducting siting plans and ordering equipment needed to install the network of charging stations. In the state Legislature, lawmakers favored a \$50 annual fee on electric vehicles which don't contribute the gas tax revenue that goes toward construction and maintenance of road and highway infrastructure. Presently, there are roughly 400 EVs on South Dakota roadways.

"We're just tremendously excited to be a part of this project," Pierson said. "Our goal is to help our members in any way we can and we want to be there on the ground floor as the industry continues to expand."

Collaborating with Pierson is Robert Raker, manager of public relations at West River Electric. They are working with utilities throughout South Dakota

and Minnesota to build out the DC fast charging infrastructure. The plan is to initially focus on major highways and interstates and then branch out from there.

The way Raker sees it, getting involved in constructing a charging station network is a sound investment in the economic growth and development of cooperative communities. He said cooperatives are leading the way by purchasing EVs of their own as demonstration models for their members and also as part of the cooperative's fleet. West River Electric's Nissan Leaf is used for business purposes throughout the day and is quite the attraction at community events on the weekends. He noted that co-ops have a long history of innovation and progress.

"Many co-ops are formulating plans to

migrate their light-duty service vehicles to EV," Raker said. "Co-ops have always been at the tip of the innovation spear. We were the first to bring power to rural South Dakota and we made sure people had access to power in order to run their farms, homes and appliances...things that would make their lives easier while allowing their communities to prosper."

Part of West River's overall EV strategy, Raker said, is to address the issue of whether the escalating number of EVs will increase stress on the electric power grid.

"EVs make the perfect load for co-ops," he said. "They can be charged during off-peak hours so they are not detrimental to the grid. Like it or not, EVs are coming. We can't change the wind so we'll have to adjust our sails."

Visit Co-op Connections Plus

Take a moment to visit our new online companion to *Cooperative Connections*. Co-op Connections Plus is a YouTube channel that features a more in-depth treatment of stories appearing in this publication as well as other subjects of interest to rural South Dakotans.

Search for "Co-op Connections Plus" and you'll find videos on human trafficking, support programs for veterans, grain bin safety, the Co-ops Vote campaign and more. Be sure to "like" and "subscribe."



Bright Futures Virtual Career Fair Showcases Rural, Agri-Business Job Opportunities

Shayla Ebsen

Grow a rewarding and challenging career right here at home. That was the overarching theme of the Bright Futures virtual career fair that was hosted on Feb. 24 by the region's Touchstone Energy Cooperatives. South Dakota and western Minnesota high school and post-secondary students, educational advisers, teachers, and parents from across the region attended the free virtual career event that highlighted rural-based careers and explored industries like finance, precision ag and agricultural trades.

"Our cooperative family is committed to enhancing the communities we serve," said Jennifer Gross, education and outreach coordinator at East River Electric Power Cooperative, one of the Touchstone Energy Cooperatives that hosted the event.

Attendees were able to connect with each other, respond to survey questions, post their own comments and photos, and participate in real-time Q&A sessions with presenters.

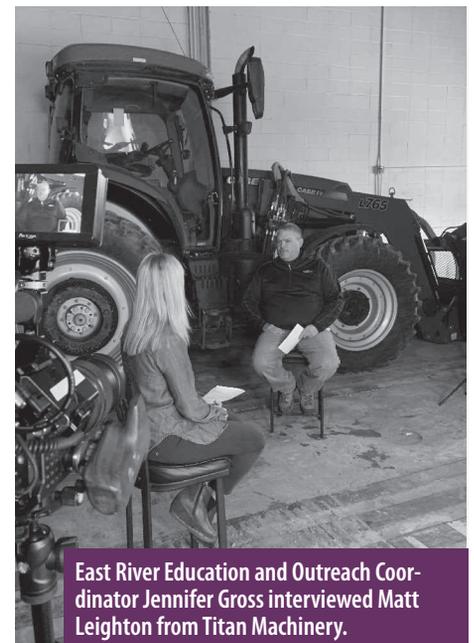
"We hosted this unique event to inspire our youth with local stories emphasizing job opportunities, career development, personal fulfillment and financial advancement. There are hidden career gems throughout South Dakota and Minnesota. This event shined a light on all the ways our rural areas offer a bright future!"



The five-hour virtual event featured a blend of keynote speakers and breakout sessions. Attendees were able to connect with each other, respond to survey questions, post their own comments and photos, and participate in real-time Q&A sessions with presenters.

South Dakota Representative Dusty Johnson opened the event with a timely discussion about politics, agriculture and our region's future. Johnson also discussed how decisions made in Washington, D.C., have a big impact on what happens in our region and why it's important for citizens to remain engaged. A few of the many companies featured during the career fair included Farm Credit Services of America, C&B Operations, Raven Industries, Midwest Vet Services, Salem Vet Clinic and Pipestone System. A panel discussion led by East River Electric Business Development Director Mike Jaspers explored opportunities that are on the horizon for the next generation of farmers, ranchers and rural social media influencers. South Dakota Ag and Rural Leadership Foundation CEO Don Norton provided the event's closing remarks.

"The nature of work in rural America is changing. Growing industries such as precision agriculture, livestock development, food processing, manufacturing, energy, communications and more require



East River Education and Outreach Coordinator Jennifer Gross interviewed Matt Leighton from Titan Machinery.

different skills, as well as an entrepreneurial spirit," said Gross. "This is truly a great time to be starting your career in our region and our goal was to highlight those awesome opportunities for our next generation of leaders."

Recorded videos from the event will be available free for viewing at yourcoop-power.com/futures. Additionally, the webpage will include information on internships and job opportunities at many of the employers that were featured in the event.

Power Grid Glossary

Learn More About the Power Grid by Knowing These Terms

Billy Gibson

billy.gibson@sdrea.coop

Power grids are essential in moving electricity from its source to the places where it's needed, but they are often overlooked and rarely mentioned - that is until a major storm strikes and the juice ceases to flow. Here is a glossary of terms that will help cooperative consumers learn more about how power moves across long distances to their homes and businesses.

BASELOAD POWER PLANT - A large, efficient generating station, typically with a capacity factor of at least 65 percent, that provides dependable power year-round at a low cost. Coal-fired, nuclear, hydro and large natural gas-fired power plants make up most baseload generation, although smaller-scale biomass facilities and geothermal power systems, if properly operated, can also produce baseload power in much smaller quantities.

FOSSIL FUELS - Hydrocarbon-based material such as coal, oil, or natural gas found within the top layer of Earth's crust and used

to produce heat or power; also called conventional fuels. These materials were formed in the ground hundreds of millions of years ago from plant and animal remains.

GRID - A network of interconnected high-voltage transmission lines and power generating facilities that allows utilities and other suppliers to share resources on a regional basis. The North American Electric Reliability Corp. oversees reliability of the electric grid covering the U.S. and most of Canada.

REGIONAL TRANSMISSION ORGANIZATION - A power transmission system operator that coordinates, controls, and monitors a multi-state electric grid. The transfer of electricity between states is considered interstate commerce, and electric grids spanning multiple states are therefore regulated by the Federal Energy Regulatory Commission.

PEAK DEMAND - The industry's equivalent of rush-hour traffic, when power costs run the highest. It's the greatest demand placed on an electric system, measured in kilowatts or megawatts; also, the time of day or season of the year when that demand occurs.

PEAK LOAD - The amount of power required by a consumer or utility system during times when electric consumption reaches its highest point; measured in kilowatts or megawatts.

POWER MARKETING ADMINISTRATION - A federal agency within the DOE responsible for marketing hydropower, primarily from multiple-purpose water projects operated by the Bureau of Reclamation, the Army Corps of Engineers, and the International Boundary and Water Commission.

RENEWABLES - Sources of energy generation that are naturally replenishable, including wind, solar, biomass, geothermal, hydro, and hydrokinetic (ocean wave and tidal) power.

ROLLING BLACKOUTS - Controlled power outages designed to lessen the threat of a major cascading outage, caused by short supply and high demand for power affecting major transmission systems. Rolling blackouts are scheduled for predetermined sectors of the transmission grid at timed intervals.

SOUTHWEST POWER POOL - An entity that manages the electric grid and wholesale power market for the central U.S. As a regional transmission organization, the non-profit corporation is mandated by the Federal Energy Regulatory Commission to ensure reliable supplies of power, adequate transmission infrastructure and competitive wholesale electricity prices.

WESTERN AREA POWER ADMINISTRATION - Markets and delivers hydroelectric power and related services within a 15-state region of the central and western U.S. One of four power marketing administrations within the U.S. DOE having the role to market and transmit electricity from multi-use water projects to retail power distribution companies and public authorities.

Sensible Solutions for Our Energy Future



South Dakota's electric cooperatives support reasonable strategies for our energy future that make sense for our members:

- Renewable energy solutions that are both productive and practical
- Rate structures that take affordability into account
- Balanced strategies centered on the best interests of co-op consumers
- Technology-based policies that promote economic development

Note: Please make sure to call ahead to verify the event is still being held.

March 19-20

Sioux Empire Arts & Crafts Show, W.H. Lyon Fairgrounds Expo Building, Sioux Falls, SD 605-332-6000

March 23-24 CANCELED

Shen Yun, Rushmore Plaza Civic Center Fine Arts Theatre, Rapid City, SD 605-394-4115

March 25

A Lakota View of the Dead Hills, Homestake Adams Research and Cultural Center, Deadwood, SD 605-722-4800

March 27

Hill City Community Easter Egg Hunt, Hill City Area Chamber of Commerce, Hill City, SD 605-574-2368

March 27

Lion's Club Easter Egg Hunt, City Park, Groton, SD 605-846-7607

March 27

SD State High School All-State Band Concert, Mitchell Fine Arts Center, Mitchell, SD

April 1-3

ACL Regional #6 Cornhole Tournament, Corn Palace, Mitchell, SD 605-996-5567

April 3

Spring Fling Fun & Glow Egg Hunt, Rush Mountain Adventure Park, Keystone, SD 605-255-4384



April 8

The Wildest Banquet Auction in the Midwest, Sioux Falls Arena/Virtual, Sioux Falls, SD 605-339-1203

April 9-10

Forks, Corks and Kegs Food, Wine and Beer Festival, Main Street, Deadwood, SD 605-578-1876

April 9-18

Four Weddings & An Elvis, Mitchell Area Community Theatre, Mitchell, SD 605-996-9137

April 17

Winefest Renaissance, Boys and Girls Club of Aberdeen Area, Aberdeen, SD 605-225-8714

April 20

All-State Chorus & Orchestra Concert, Denny Sanford PREMIER Center, Sioux Falls, SD

April 22-May 2

Beauty and the Beast, Sioux Empire Community Theatre, Sioux Falls, SD 605-367-6000

April 23-24

Junkin' Market Days, W.H. Lyon Fairgrounds Expo Building, Sioux Falls, SD 605-941-4958

April 30-May 2

Radium Girls, Pierre Players Community Theatre, Pierre, SD 605-224-7826

May 8

Davis Flea Market & Artisan Fair, Main Street, Davis, SD 605-940-0069

May 15

Red Dirt Music Festival featuring Casey Donahew, Ian Munsick and Randy Burghardt Deadwood Mountain Grand, Deadwood, SD 605-559-0386

May 21-23

Annual Sound of Silence Tesla Rally, Downtown, Custer, SD 605-673-2244

May 21-23

State Parks Open House and Free Fishing Weekend, All State Parks and Recreation Areas, SD 605-773-3391

May 22

Frühlingsfest & Spring Market, Main Street, Rapid City, SD 605-716-7979

June 5-6

18th Annual Wessington Springs Foothills Rodeo, Wessington Springs Rodeo Grounds, Wessington Springs, SD 605-770-5720

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.