

Connectivity and the Internet of Things

By Rick Nelson

Sometimes in the rural community we need to come together in order to help ourselves out. I know to us in central Nebraska, that's nothing new. Trying to convince the legislature in Lincoln that we don't have access to broadband is a hard fought battle. I'm sure there are plenty of us, and specifically in Custer PPD's service territory, that fight that 'connectivity' battle every day.

At Custer PPD, we recognized several years ago that to operate a rural electrical system more efficiently, it would take some 'connectivity'. We've been working on connecting our substations and towers in an effort to help control things a little faster and allow Custer PPD to reduce losses.

'Connectivity' was only possible by coming together with some partnerships with our local telephone companies - Consolidated Telephone, Nebraska Central

Telephone, and Great Plains Communication. These relationships have been invaluable, and it's because of the leadership in these organizations that partnerships have been made.

Now along comes a company by the name of Paige Wireless. Paige Wireless has been working on an initiative to connect

As stated by Paige Wireless:

"We now live in a period where farms can afford to take advantage of new sciences like LoRaWAN® sensors. But what does a "Connected Farm" actually mean? A Connected Farm means something different for every farmer but by and large, it's one that leverages technology to decrease their input costs and increase their bottom line. They use real-time data to make informed decisions on a granular level."

We can only imagine how beneficial this could be to our farmer-rancher customers. Not only will this effort connect every acre in

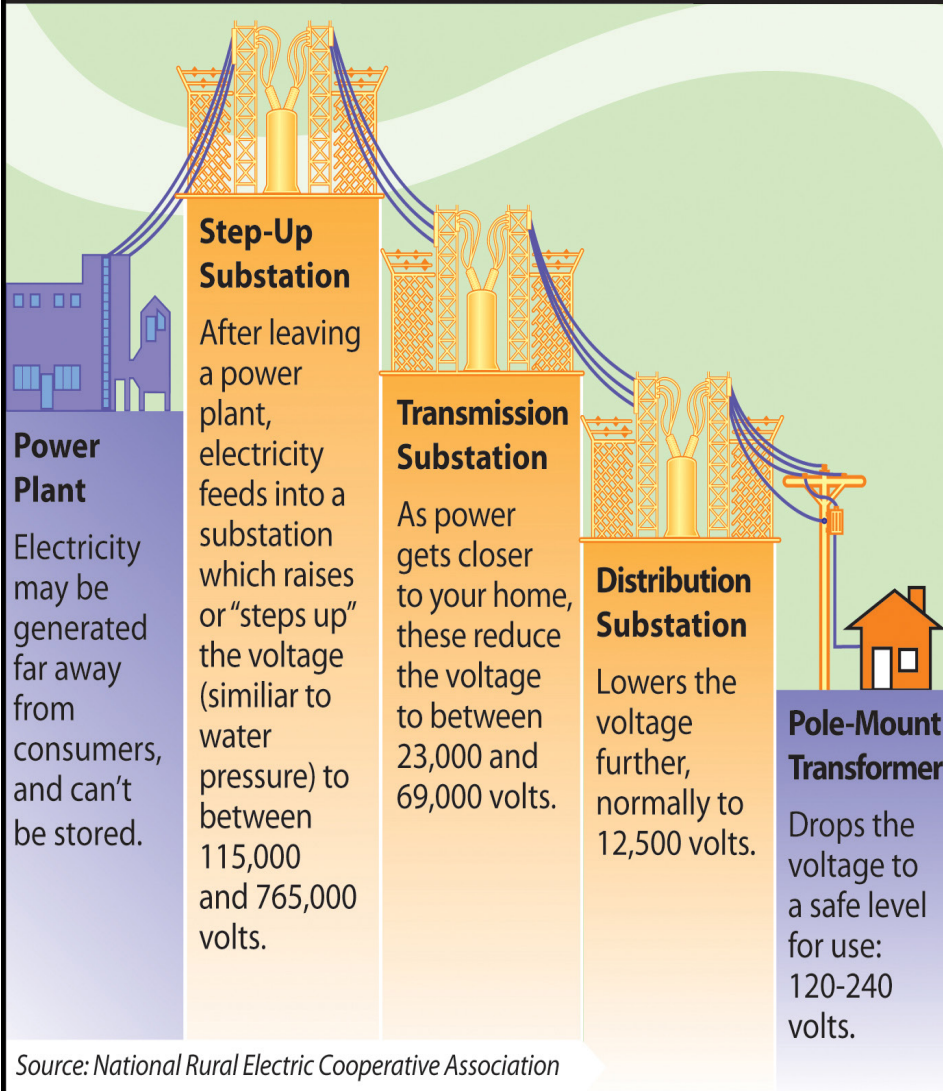
Nebraska, but also allow for the much needed broadband for small businesses in rural areas.

So, when you take the partnerships that have been made with the local telephone companies and Custer PPD then add Paige Wireless into that equation,



every farmer in Nebraska and to cover every acre in Nebraska by deploying the first statewide public LoRaWan network in North America. Paige Wireless launched Smart State Nebraska back in October of 2019 and continues to fan out across Nebraska.

Substations: Stepping Up to Provide Power



(continued) everybody has a new tool that could help serve customers in rural areas with something called the Internet of Things. The customers of Custer PPD service territory have 'connectivity'.

From a Public Power perspective, we don't want to be in a communications/internet/broadband arena. But we can help facilitate some of those partnerships that need to be made. Again, Custer PPD does not and will not be selling internet service to anybody. Public Power cannot be in that space and we don't want to be in that space. However, there are plenty of others who are willing to partner in order to get rural Nebraska connected.

Hats off to our local communications companies and to Paige Wireless for trying to provide more Nebraskans with broadband 'connectivity' from the field to the farm and for small businesses in rural areas. ♦

Custer Public Power District Training and Demonstrations

Custer Public Power District offers educational trainings and demonstrations on electrical safety to schools, to local fire and rescue groups, and businesses.

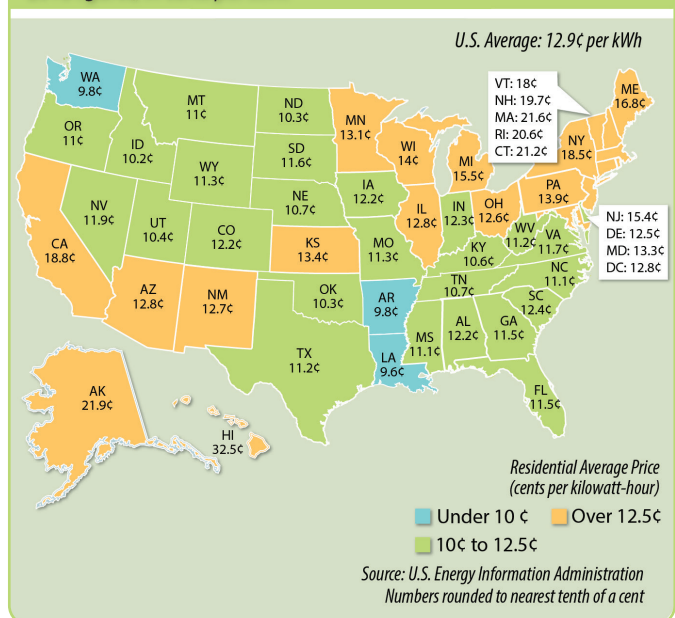
Trainings and demonstrations include:

High Voltage Demonstrations
PowerTown Demonstrations
Job/Work Shadowing

For more information contact:
Cindy Lindner, Assistant Operations Manager at 308-872-2451

Average Prices for Residential Electricity

2018 figures, in cents per kWh



Engine Block Heater Tips

Nothing can be more aggravating in the winter than jumping into your vehicle and turning the key in the ignition, only to find the engine will not start. And it is bitterly cold outside!

Some choose to use a block heater to help their vehicle or tractor start during cold weather. However, if you do not pay attention to how you use this nifty device, it could end up costing you more than twice its initial purchase price each winter. You may be tempted to “plug” it in when you get home every day so your vehicle will start easily the next morning. If you are using a 500-watt heater for 12 hours per day from November through February, you can expect to pay around \$100 for this convenience.



Here are a few tips for managing that cost.

- Unless it is going to be colder than 10° or 15°F outside, it is usually not necessary to plug in your vehicle. The electronic fuel and ignition systems in today’s vehicles automatically adjust to compensate for cold temperatures.
- Consider using a timer on your heater to reduce unnecessary usage. Research done by the Agricultural Engineering Department of the University of Saskatchewan has shown that operating a block heater for longer than four hours prior to starting a vehicle is a waste of energy. It was found that engine coolant temperature increased by about 36°F during a four-hour period. However, continued use of the heater for an additional one to two hours only achieved an additional 3° to 5°F increase.
- Consider an engine heater with reduced wattage.
- Electric battery blankets typically draw less power than block heaters and still condition the battery to provide ample electrons that will get the engine started when it is bitter out.

Having peace-of-mind that your car will start on the coldest days should not have to cost you an arm-and-a-leg. By making some EnergyWise choices this winter, you can be assured you will get to your destination and be energy efficient at the same time.

Youth Activities for 2020!

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|---------------------|--|
| March 6 | Deadline for the Utility Line Scholarship |
| May 29 | Applications for the NREA Youth Energy Leadership Camp due. Open to Freshman, Sophomores, and Juniors |
| June 12 - 18 | NRECA Washington, D.C. Youth Tour |
| July 20 - 24 | NREA Youth Energy Leadership Camp at Halsey |
| Sept 30 | Calendar Entries are due - <i>open to any age and person as long as the picture is taken in the Custer PPD service territory</i> |



Chocolate Pudding Cake

Surprise your Valentine with this super easy, rich chocolate pudding cake.

It is a family favorite!



INGREDIENTS

- 3/4 cup all purpose flour
- 3/4 cup granulated sugar
- 1 1/2 teaspoons baking powder
- 1/2 teaspoon baking soda
- 1/4 teaspoon salt
- 1/3 cup plus 1/4 cup unsweetened cocoa powder
- 1/2 cup milk
- 3 tablespoons unsalted butter melted
- 1 1/2 teaspoons vanilla extract
- 1/2 cup firmly packed brown sugar
- 1 3/4 cups boiling water



Garnish with berries and whipped cream.

INSTRUCTIONS

Preheat oven to 350 degrees F. Grease a 9 inch square baking dish or round souffle dish. Combine flour, granulated sugar, baking powder, baking soda, salt and 1/3 cup cocoa in medium bowl. Add milk, butter and vanilla, stir until just blended. Spoon the batter into the prepared dish-cooking spray.

Combine brown sugar and remaining 1/4 cup cocoa in small bowl. Sprinkle evenly over batter. Pour boiling water over entire mixture; do not stir.

Bake 35 to 38 minutes, until a toothpick inserted into the top layer comes out clean. Cool at least 10 minutes. Serve in bowls with garnishes if desired.

The recipe can be found at:
www.dinneratthetoo.com/chocolate-pudding-cake/

CUSTER CURRENTS

Newsletter of the
Custer Public Power District
Broken Bow, NE - Phone 872-2451
www.custerpower.com

Serving Custer, Loup, Blaine, Thomas, Hooker, McPherson, Logan and parts of Sherman, Garfield, Brown, Cherry, Lincoln, and Dawson Counties

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Board Meetings

The regular monthly meeting of the Custer Public Power District Board of Directors is on the last Thursday of each month, beginning at 10:00 a.m. in the main office in Broken Bow on Hwy. 2.

An agenda for each regular meeting of the board is available for public inspection during business hours.

In the event of matters of an emergency nature or conflicts with other meeting dates, the Board of Directors will set changes. Any change in the monthly meeting date will be posted in the legal notice at the main headquarters building at Broken Bow and at each of the District's area service centers located in Callaway, Sargent, Stapleton and Thedford, Nebraska.

