Perennial NEWS

A PUBLICATION OF THE
PERENNIAL PUBLIC POWER DISTRICT

August 2018
Vol. 19
No. 4

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Harnessing the Wind

Fairmont Wind Farm creates green energy for our customers.

Working Together for You

Perennial and its electric partners work hard every day to keep prices low.

Energy for Generations
PERENNIAL™
PUBLIC POWER DISTRICT

PerennialNEWS
CONNECTIONS

Jamey Pankoke
General Manager

In the Wind

If something is said to be in the wind, it generally means that people are talking about it and it may happen, but it might just be a rumor. If someone is said to be in the wind, it usually means they are missing, especially after escaping. Well, I can tell you that the Perennial Wind Farm is no rumor, and it certainly isn't missing. Bluestem Energy Solutions, the installer, owner, and operator of the wind farm completed construction on the project in July, so its full speed ahead. That is, of course, when the wind is blowing.

The data shows that the site west of Fairmont where the turbines are located has all the characteristics, including wind availability and speed, of a good wind power site. But it takes more than just a good wind resource to develop a wind project. The siting process is just as important. Utility-scale wind farms typically require access to a market via large transmission facilities. However, the Perennial Wind Farm didn't need a transmission interconnect. It is connected at the distribution level, which by itself is a challenge. One issue is having enough electric load on the windiest days to make sure there is a place to put the electricity. The good news is these turbines are located in an area of the district with some of our heaviest electric loads.

Like most large projects, financing is a large hurdle to overcome when installing any type of power generation. For us this wasn't a concern. Bluestem was responsible for all capital costs of construction and will also bear the burden of all expense for ongoing operation and maintenance. Our only financial commitment over the life of the power contract will be to purchase the output of electricity from the turbines.

While our wholesale power contract with NPPD limits how much renewable energy that we can purchase from other suppliers, we expect that the wind turbines will produce about 25 million kilowatt-hours of electricity per year, which represents around 8 percent of the total amount of energy that we buy for our customers annually.

Even though the energy that we purchase from Bluestem will only account for a small portion of the amount that our customers consume every year, we decided to go forward with this project for economic reasons. For one, Bluestem offered guaranteed pricing over the life of the power purchase agreement. This price certainty will help us from a budgeting standpoint for years to come. In addition, locking into long-term rates on a small percent of our total wholesale energy acts as a hedge against rate increases in the other wholesale power that we purchase in the future. Then there is also the revenue the District will receive from the sale of the Renewable Energy Certificates that will be established as proof of the megawatt-hours of electricity generated from the Perennial Wind Farm.

But there are other benefits that will be realized with our purchase of energy from this wind farm. For example, I believe there will be days in the summer when the wind turbines are operating where we will be able to allow a significant number of irrigation wells in our load control program to continue to run, rather than having to shut them off to maintain our peak load at the desired level.

The amount of money that was infused into the local economy during the turbine construction phase was considerable. And investments will continue to be made locally during operations and maintenance, both in the way of property tax revenue as well as direct spending by maintenance contractors.

A segment of our customers want access to renewable energy, either because it can help their company's bottom line, or they just flat out support cleaner energy. You might say that they are pleased that Perennial is in the wind.

Perennial News **is published bimonthly by:**
Perennial Public Power District
2122 South Lincoln Avenue
York, NE 68467
Phone: (402) 362-3355
www.perennialpower.com
email: perennial@perennialpower.com
Application to mail at periodicals postage prices is pending at York, NE.

POSTMASTER:
Send address changes to:
Perennial News
2122 South Lincoln Avenue
York, NE 68467

Subscription Rates: $1.00 per issue

Youth Energy Leadership Camp

On July 9-13, 2018, Perennial sponsored Wyatt Hansen of Fairmont at the annual Nebraska Rural Electric Association (NREA) Youth Energy Leadership Camp at the State 4-H camp in Halsey National Forest. Wyatt is the son of Amanda Schropfer and Henry Hansen.

Isabelle Vanderneck of Henderson returned to the camp as a junior counselor. Isabelle is the daughter of Chris and Linda Vanderneck.

Isabelle Vanderneck and Wyatt Hansen attended Youth Energy Camp in July. This is Isabelle's second camp trip. She was voted to return as a junior counselor.

Youth Energy Leadership Camp is a fun filled week that taught the students how public power districts operate. The students toured Gerald Gentleman Station near Sutherland and the Kingsley Hydro at Lake McConaughy.

Wyatt also had the opportunity to compete in the ambassador contest for a trip to attend Youth Tour in Washington D.C. Wyatt was voted by counselors and campers to return next year as a junior counselor.

Safety Tips for College Students

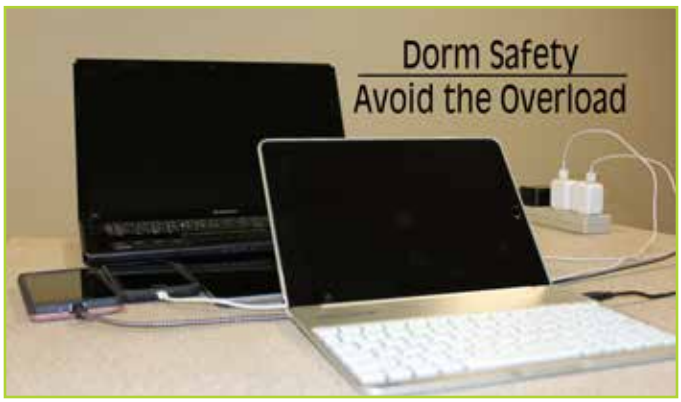
Before heading to college, students need equipped with supplies for their dorm rooms and important knowledge for living on their own—including electrical safety knowledge.

Many colleges across the U.S. ban cooking appliances from on-campus housing including: hot plates, coffee makers, and microwaves; and many of these places may already have a designated area for the use of the products.

Perennial and Safe Electricity offer tips for students to help prevent and reduce the risk of electrical fires in student housing:

- Only purchase and use electrical products tested for safety. Some common approved safety labels include UL, CSA, and MET.
- Avoid overloading extension cords, power strips, or outlets.
- Use power strips with an over-current protector that will shut off power automatically if there is too much current being drawn.
- Never tack or nail an electrical cord to any surface or run cords across traffic paths or under rugs where they can be trampled or damaged.
- Use the correct wattage light bulb for lamps and fixtures. If no indication is on the product, do not use a bulb with more than 60 watts. Use cooler, light-emitting diode (LEDs) bulbs.
- Keep all electrical appliances and cords safely away from bedding, curtains, papers, and other flammable material.
- Make sure outlets around sinks are equipped with ground fault circuit interrupters (GFCIs) before use. If they are not, contact the resident assistant, campus housing staff, or landlord.
- Unplug small appliances when not in use and all electronics when away for extended periods.
- Always use microwave-safe containers. Glass, ceramic containers, and plastics labeled "microwave-safe" should always be used. Metal and aluminum foil can damage the microwave or start a fire. If the microwave is damaged in any way, do not use it.
- Smoke detectors should never be disabled, and fire alarms should never be ignored or taken casually as a drill. Every time a fire alarm sounds, residents should calmly and quickly follow practiced procedures and immediately exit the building.

For more fire and electrical safety information, visit SafeElectricity.org.



Harnessing the WIND

You may have noticed a change in the scenery along Highway 6 by Fairmont. Bluestem Energy Solutions' wind farm has been finished. The 6.9 megawatt wind farm is made up of three 2.3 megawatt General Electric turbines. According to the American Wind Energy Association, if these turbines were to operate at maximum capacity year round they could supply electricity to approximately 2,070 households.

Obviously, the wind power is intermittent and variable, due to the wind speeds constantly changing, so the turbines are expected to produce power at about 43 percent of their capacity during the year.

A wind turbine uses moving air to create electricity. Wind travels across the blades and creates lift, which turns the turbine's blades clockwise, capturing energy. This causes the main shaft, which is connected to a gearbox, inside the

Above: Technician stands on helicopter landing skid to install bird flight diverters on Perennial's power lines

Full Page: Crews begin to lift the massive blades of the wind turbine into place.

nacelle to spin. From there the energy is delivered to the generator, where it is converted to electricity. The electricity then travels down the tower to a transformer where voltage levels are adjusted, and it is put on the grid. The turbines will generate electricity at wind speeds from 6 to 56 miles per hour; if the wind is too fast the turbines will shut down.

While the turbines might not appear that large from the road, they are taller than they appear. From the tip of the blade to the base it is 473 feet. This is higher than the state capitol, which is 398 feet tall. Since most of the size is height and not width, they only take up about a couple of acres of land, that's including the driveway.

Before Bluestem could start this project, Perennial had to install bird flight diverters on our lines and Nebraska Public Power District's lines to help detour the routes of migrating birds that fly through the area. This was done in partnership with Nebraska Game and Parks and Nebraska Public Power District.

By purchasing this renewable energy from Bluestem Energy Solutions, we hope to add value to the District while saving money for our customers.

Like a giant erector set, the pieces of the wind turbines are lifted off the ground and assembled.

Working together for you

Being an all public power state has its benefits. One of them is that both the generator, Nebraska Public Power District (NPPD) and distributor, Perennial Public Power District are working together with your best interests in mind. Both NPPD and Perennial are governed by boards which are filled by people that you elect to represent your community.

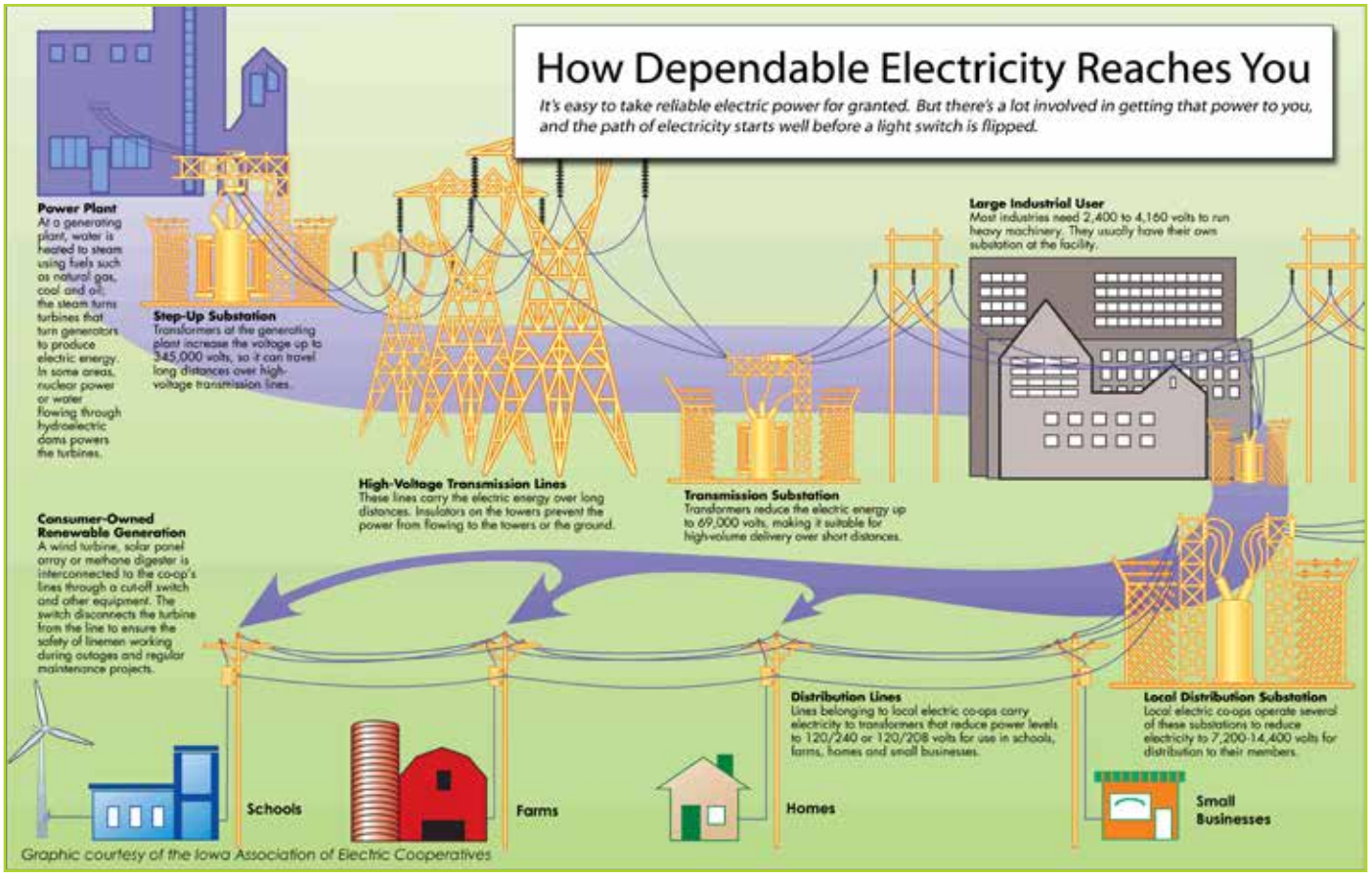
NPPD is a member of the Southwest Power Pool (SPP), a not-for-profit, regional transmission operator that ensures a reliable supply of power, adequate transmission infrastructure, and competitive wholesale electricity prices for central United States. It covers a 575,000 square mile region that consists of more than 60,000 miles of high-voltage transmission lines in its footprint.

NPPD and other utility members of SPP submit bids in both their generation and required load. SPP then determines which generation facilities get dispatched based on cost and availability to serve all customers within the region. Sometimes NPPD can buy power in the SPP market for less than it would cost to generate its own energy. Generally, NPPD would prefer to generate its own energy, because the SPP market is volatile because of the amount of renewable resources, such as wind and solar generation in the SPP.

NPPD has several types of generation throughout the state, which is part of the way they keep their rates low. They have two coal-fired facilities, one nuclear energy facility, two gas and oil facilities, six hydropower facilities, and seven wind energy facilities. Some of these facilities are owned by other districts, and NPPD purchases a share of the energy from the facilities through a power purchase agreement.

Everyday NPPD and Perennial work together to make sure transmission lines, substations, and distribution lines are maintained and replaced as needed. Additionally, we jointly provide energy efficiency programs, such as EnergyWise incentives and home energy audits. Furthermore, we partner together to provide energy education programs and environmental stewardship.

Perennial is a member of the Nebraska Rural Electric Association (NREA), a statewide organization, which provides several beneficial services. These services include youth programs, job training, safety education, and legislative affairs. The NREA lobbyists represent the rural electric point of view on a variety of issues in Congress, the Nebraska Unicameral and state and federal agencies whose policies



or programs impact the rural electric utilities and electric customers in Nebraska.

Lastly, the National Rural Electric Cooperative Association (NRECA), a national organization that represents rural public power districts and electric cooperatives, provides valuable services to more than 900 consumer-owned, not-for-profit electric utilities like Perennial. The NRECA provides an amplified voice for Perennial and our fellow rural utilities in Washington, D.C. by working with elected officials to keep electricity safe, reliable and affordable.

By working together, we can keep rates stable and provide many valuable resources to our customers.

Top: Substation located at NPPD's Gerald Gentleman Station (Nebraska's largest electricity generating plant)
Bottom: Unit 1 at Gerald Gentleman Station (GGS) has a generating capacity of 665,000 kilowatts. It is one of two generators at GGS.

Part of Perennial

We are proud to welcome Grant and Aaron to the Perennial Family

Grant Snyder

Grant was hired as an Apprentice Line Technician on May 5, 2018. Grant attended Metropolitan Community College in Omaha where he received his Associates Degree in Utility Line in 2011. After graduating Snyder worked for Hutton Contracting in Oklahoma, then went on to work for Chain Electric out of Iowa, he returned to Nebraska to work for Holler Electric out of Nelson for a couple of years before spending four years working for the city of Superior. Grant lives in Geneva with his 4 year old son Bowen. In his free time Snyder enjoys participating in demolition derbies, boating, fishing and hunting. Please help us welcome Grant Snyder to Perennial.

Aaron Norquest

Aaron was hired as an Apprentice Line Technician on July 2, 2018. Aaron attended York High School and was the recipient of Perennial's utility line scholarship. Norquest attended Northeast Community College in Norfolk and received his Associates Degree in Utility Line by completing his internship at Perennial the summer of 2016. After completing his degree he started working for Lake Region Electric Cooperative in Hulbert Oklahoma. Aaron is the son of Tim and Holly Norquest of York. Norquest is currently living in York and in his free time he enjoys boating and riding four wheelers. Please help us welcome Aaron Norquest to Perennial.

PerennialNEWS

Line Technician Scholarship

Perennial Public Power District is offering a $1,000 per year scholarship to a student planning to enroll in an accredited utility line program. Applicants must reside within Perennial's service area to be eligible.

This scholarship program is aimed at highly-motivated and safety-conscious individuals who want to become a line technician. Perennial PPD does not guarantee future employment through this program.

The deadline for applying for the scholarship is December 31, 2018. Scholarship applications and applicant guidelines are available on our website, www.perennialpower.com or contact Courtney VanSkiver at courtneyv@perennialpower.com.

Community Calendar

August 2-5 – York County Fair

August 11 – Tractor, Engine & Auto Show *Wessels Living History Farm*

Aug. 24 –Sept. 3 – Nebraska State Fair - Public Power Booth

September 3 – Perennial Office Closed in Observance of Labor Day

September 6-9 – YorkFest Celebration

September 8 – Heritage Day at Heritage Park *Henderson*

September 11-13 - Husker Harvest Days - Public Power Booth and Hot Line Demo

September 14-16 – McCool Junction Mustang Round Up

Refrigerator Tip

Here's a cool tip for your fridge! Cover liquids and wrap foods stored in your refrigerator. Uncovered foods release moisture, causing the compressor to work harder.

Source: energy.gov