



Transforming the Future

Norris Public Power District

Sustainability Report 2017

TABLE OF CONTENTS

Mission Statement	3
General Manager/CEO Message	4
Section 1 - Energy Efficiency	5 - 6
EnergyWise SM Efficiency Incentives	
Home Energy Savings	
Energy Assessments	
EnergyWise SM Tips	
Irrigation Calculator	
Load Management	
Annual Estimated Irrigator Cost Savings	
Commercial Interruptible Rate	
Section 2 - Environmental Stewardship	7 - 10
Nebraska Public Power District's Generation Resources	
Wildlife Protection	
Avian Protection	
Pole Maintenance Program	
Right-of-Way Maintenance	
Safety Training	
Safety Committee	
Energy Education	
High Voltage Safety Demonstration	
Public Power Station	
Environmental Protection Agency	
Paperless Billing	
Paperless Communications	
Waste Reduction and Recycling	
Section 3 - Renewable Energy	11
Distributed Generation	
Section 4 - General Information	12
Director and Employee Development	
Economic Development	
Grassroots Initiative	

MISSION STATEMENT

The Norris Public Power District's mission is to safely provide electricity and related services to customers at competitive prices, in the most reliable, efficient and environmentally responsible manner.

Our mission statement exemplifies our motto, "Dedicated to Serving You", which confirms the District's commitment to providing high quality, uninterrupted service to its customers, while maintaining its dedication to the economic viability of its service area and an ongoing respect for the natural environment.



GENERAL MANAGER/CEO MESSAGE

Norris Public Power District (District) conducts operations in a sustainable or long-lasting manner while maintaining an ongoing respect for the natural environment. The District has an ongoing and long-term relationship with our primary power supplier, Nebraska Public Power District (NPPD). Together, we are committed to enhancing the quality of life in Nebraska. This commitment cannot be accomplished without consideration for the environment in which we all live and taking into account economic considerations for our customers.

NPPD commits significant resources to ensuring that their generating plants meet all emission requirements and environmental regulations. NPPD's diverse generation resources are 49 percent carbon-free with plans to increase their carbon-free resources with the conversion of a boiler in one of their coal generation plants from burning coal to clean burning hydrogen in a unique and innovative partnership among NPPD, the District and a large industrial customer.

This Sustainability Report features many ways in which the District provides energy efficiency opportunities for our customers and practices environmental stewardship. Renewable energy is important to customers as evidenced by the number of distributed generation facilities as shown in the renewable energy section.

The District will consider utility scale renewable generation opportunities and will participate in projects that are cost-effective and consider customer interests. We advocate for projects that protect the environment, while ensuring reliable and affordable power.

This Sustainability Report is a glimpse of what the District is doing to be good stewards of the natural resources that have been given to all of us. We will continuously pursue improvements in how we impact these natural resources and appreciate the interest of our customers in our sustainability efforts.

Bruce Vitosh
General Manager/CEO

SECTION 1: ENERGY EFFICIENCY

Energy efficiency is a cost-effective way Norris Public Power District can help customers make improvements that save energy and money. Energy efficiency also plays an important role in meeting current and future energy demands, limiting impacts on the environment and deferring the need for our power supplier to build more generating facilities in the future. In an era of emission requirements, energy efficiency programs will play a role in meeting customers' needs while also helping to optimize resources and protect the environment.

EnergyWiseSM Efficiency Incentives

Norris Public Power District offers various EnergyWiseSM efficiency incentive programs to customers who wish to become more energy efficient as well as to help offset energy costs. Most energy efficiency upgrades not only save energy in the year they are installed, but for all years of operation.

Incentives Offered:

Residential

- Attic Insulation
- Cooling System Tune-Up
- High Efficiency Heat Pump
- Heat Pump Water Heater

Commercial

- HVAC
- HVAC System Optimization
- Prescriptive Lighting
- Variable Frequency Drive (VFD)
- Agricultural Hog Mats
- Industrial Process

Irrigation

- Corner Pivot Variable Frequency Drive (VFD)
- Custom Irrigation

Electric Vehicle

- Charging Station Pilot

Home Energy Savings

Norris offers programs to help residents save energy which helps keep customer bills down and delays the need for new, high-priced power plants.

The Home Energy SuiteTM is a reliable information resource that answers questions regarding a home's energy use. Home Energy SuiteTM is located on the District's website at www.norrisppd.com. The software includes the Home Energy Library, Fundamentals of Electricity, Kid's Korner, Appliance Calculator, Heating Calculator, Irrigation Calculator,

Lighting Calculator, Heat Pump Calculator and more. Customers who utilize the Home Energy Suite™ tools receive recommendations to improve their energy efficiency to save money.

Energy Assessments

The District offers free residential and commercial energy assessments for all customers. Energy assessments include an in-person analysis of the home or business, and provide customers with a variety of suggestions to reduce their energy consumption.

EnergyWiseSM Tips

All customers who provide the District with an email address receive a bi-monthly E-Newsletter that contains an EnergyWiseSM energy efficiency tip. Customers can utilize the tips to make the most efficient use of the power they purchase.

Irrigation Calculator

The District offers an irrigation calculator for customers who are interested in comparing various power sources based on number of acres irrigated, pounds per square inch to pump, pump motor size and more.

Load Management

During the summer, higher temperatures and the need for irrigation, create seasonal peak demands. The price customers pay for energy is higher during the four summer months (bills rendered between June 15th and October 15th) and are lower in the remaining months.

The majority of the total irrigated load served by Norris Public Power District is enrolled in a load management program. Rates paid by irrigation customers in these programs are determined by the operating schedule the customer chooses. The more days per week an irrigator is willing to be interrupted, the lower their horsepower charge and energy use rates.

Annual Estimated Irrigator Cost Savings

Based on a 60-horsepower motor and 30,000 kilowatt-hours usage, an irrigator on an anytime interruptible rate, will pay on average forty percent (40%) less than an irrigator on a full service rate. An irrigator on a four days interruptible rate will pay on average twenty-four percent (24%) less than an irrigator on a full service rate.

Commercial Interruptible Rate

The Commercial Interruptible Rate is available for commercial, industrial and farm services greater than 50 kVA required transformer capacity. Interruptions to commercial customers are made only on days when peak power levels are being exceeded.

SECTION 2: ENVIRONMENTAL STEWARDSHIP

Did you know that 49 percent of Nebraska Public Power District’s generation resources are carbon-free? Norris Public Power District purchases 98% of its power supply requirements from Nebraska Public Power District (NPPD). Norris Public Power District maintains a long-term Wholesale Power Contract with NPPD for power supply requirements through the year 2035.

NPPD knows it is risky to generate electricity using only one fuel source. Diversity allows them to call upon other generation resources at their most economical and available times. NPPD’s energy portfolio balances the environmental, societal and economic needs of their customers. Together with NPPD, our energy supplier, Norris Public Power District firmly believes a diverse energy generation mix serves customers best.

Coal	45.3%	Base load power designed to run as much as possible
Nuclear	36.5%	Carbon free emission power designed to run as much as possible
Wind	6.3%	Renewable power that runs when the wind is blowing
Hydro	6.3%	Renewable power that runs when water is released from dams
Gas/Oil	1.5%	Peaking power that runs when power demands are high
Purchases	4.1%	Power acquired through energy markets

Wildlife Protection

Norris Public Power District faces numerous challenges each day to supply customers with reliable energy. Severe weather is the leading cause for outages. Another major cause for outages is wildlife, such as birds, squirrels, raccoons, snakes and other animals, coming into contact with electrical equipment. The District protects critical electrical equipment such as transformers, voltage regulators, breakers, substation equipment and structures with animal protective devices.

The District makes an investment to reduce wildlife-caused outages. It is cost-effective, reduces outages and protects wildlife. Rather than waiting for problems to occur due to animal invasion, the District takes a proactive approach to save time and money.

Avian Protection

Since the formation of the Avian Power Line Interaction Committee (APLIC) in 1989, the electric utility industry and the U.S. Fish and Wildlife Service (USFWS) have worked together to reduce avian electrocution and collision mortality. Norris Public Power District is committed to minimizing its impact on migratory birds and to complying with avian protection regulations

within its goal of providing safe, reliable, cost effective and environmentally friendly electrical service.

The Norris Public Power District Board of Directors approved and adopted an Avian Protection Plan. The Avian Protection Plan is intended to ensure compliance with legal requirements regarding avian interactions with the District's electric facilities. Also, the plan is designed to reduce the operational and avian risks that result from avian interactions with electric utility facilities. Norris management and employees are responsible for managing avian interactions with power lines and are committed to reducing the detrimental effects of these interactions.

Pole Maintenance Program

Norris Public Power District has an effective pole maintenance program. The program prolongs the useful service life of a pole and the needless harvest of additional trees. Avoiding the unnecessary harvest of trees leaves this precious natural resource in our forests.

Right-of-Way Maintenance

Trees not only help clean the air, the shade they provide helps reduce peak energy usage and conserve energy. However, trees that are located too close to power lines can disrupt electric service and cause safety hazards to utility line workers and the public.

Norris Public Power District operates and maintains over 5,500 miles of overhead distribution and subtransmission lines. To prevent power outages and incidents due to trees coming in contact with power lines, the District maintains a Right-of-Way Department that works throughout the year to prune tree limbs away from power lines and electrical equipment throughout the District. The Right-of-Way Department is supervised by an arborist that has been certified by the Nebraska Arborists Association and department employees participate in ongoing training each year to stay well-informed of industry trends.

Cleaner energy is important, but safety is our top priority.

Norris Public Power District is committed to a healthy and injury-free workplace.

Safety Training

Safety training is the most cost-effective way to protect the District's most valuable asset, its workforce. Monthly safety training provides District staff with knowledge and skills to perform their work in a way that is safe for them, their co-workers and the public.

Safety Committee

The District has a Safety Committee that meets a minimum of six times a year. The committee reviews and investigates all incidents involving employees or members of the public, and damage or destruction of property of the District or of the public. A monthly safety report is given to the Board of Directors that includes, but is not limited to, incidents occurring during the period since the last report, the loss prevention activities engaged in by the District and the activities of the Safety Committee.

Energy Education

Norris Public Power District, in cooperation with Nebraska Public Power District, offers an exceptional energy education program for students in kindergarten through twelfth grade. This complimentary educational opportunity is available to all schools within the District's service territory. Programs engage students by utilizing hands on activities, while learning about electricity, science and safety.

High Voltage Safety Demonstration

Electrical safety education is an important part of Norris Public Power District's commitment to our customers. Our goal is to reduce preventable injuries and to save lives by educating not only children, but adults as well. The District has available a high voltage safety demonstration that shows first-hand some of the dangers of coming in contact with live electrical equipment. The demonstration also educates the public on how to react in an electrical emergency, such as a car accident with downed power lines around or on a vehicle.

Public Power Station - Nebraska State Fair

Norris Public Power District employees participate in the Public Power Station booth at the Nebraska State Fair. The booth shows the important role Nebraska's citizens play in ensuring the state's public power model is well suited to serve them. The booth includes hands-on activities, public power information and safety demonstrations.

Environmental Protection Agency - Poly Chlorinated Biphenyls (PCB) Testing, Recycling and Disposal

The District has tested all existing and energized transformers for the presence of PCBs. Transformers purchased by the District in 1984 and later, are stated by the manufacturer to contain less than 1 part per million (ppm) of PCBs at the time of manufacture.

When determined that aged electrical distribution equipment is no longer usable by the District, the equipment and contents are recycled. What is done, or how the equipment is salvaged, depends upon the concentration of Polychlorinated Biphenyls (PCBs) contained within the mineral oil dielectric fluid within the unit. Oil is laboratory tested to determine the PCB content of the dielectric fluid.

Equipment carcasses and oil are shipped to an approved disposal contractor where the oil is dechlorinated, filtered and resold as recycled mineral oil for other uses. Once clean, the core steel, tank and fittings steel and winding material are separated and sold for reuse. The entire regulated PCB chemical involved in this process is disposed of according to EPA mandated regulations. EPA required record keeping then occurs in house detailing the decontamination process and disposal according to EPA regulations.

In 2017, Norris recycled approximately 2,500 gallons of mineral oil and 180,000 pounds of steel, aluminum and copper.

Paperless Billing

Norris Public Power District offers paperless billing in which a customer's monthly statement is delivered electronically rather than printed and mailed. By going paperless, there is less cost to the District and more convenience for the customer. Customers can conveniently view and pay their electric bill online, all while making a significant and positive impact on the environment by reducing paper consumption and cutting down on waste.

Paperless Communications

Financially, logistically and environmentally are all benefits to having a paperless office. The biggest advantage of having a paperless office is that it helps make the earth greener by fewer trees being cut down to produce paper.

Paperless communications include:

- ❖ E-mail - internal and external communication
- ❖ E-Newsletter - bi-monthly electronic customer newsletter
- ❖ Mobile technology - linemen utilize mobile devices to simplify work processes, improve communication, find the most efficient route to reduce travel time and create efficiencies in their day-to-day operations
- ❖ Board Meeting documents
- ❖ Employee benefit plan documents

Waste Reduction and Recycling - Doing the Right Thing for the Environment

A variety of materials are recycled each year. Recycled materials include:

- ❖ Aluminum
- ❖ Cardboard
- ❖ Copper
- ❖ Light Bulbs
- ❖ Newspapers
- ❖ Oil
- ❖ Paper
- ❖ Steel

SECTION 3: RENEWABLE ENERGY

Distributed Generation

A renewable resource is an energy source that is regenerative or virtually inexhaustible. Renewable energy sources include solar, wind, biomass, waste, geothermal, and water (hydroelectric). Solar thermal technology converts solar energy into thermal energy, while solar photovoltaic converts solar energy into electrical energy. Wind turbines harness wind’s kinetic energy and convert it into electricity. Biomass energy is derived from hundreds of plant species, various agricultural and industrial residues, and processing wastes. It has become increasingly more common to utilize renewable resources in a distributed fashion. Unlike large utility scale generation sources, distributed generation uses smaller scale technologies to produce electricity close to the end users of power. In many instances, the distributed generation resource is customer, not utility, owned.

Pursuant to State Statue 70-2005, enacted in 2009, Norris Public Power District must publish an annual net metering report. Net metering is available to customers who install renewable fuel generators such as solar, wind, hydro or biomass sources and operate the generator in parallel with Norris Public Power District’s electrical system.

**Norris Public Power District
Net Metering Report
December 31, 2017**

Total number of qualified facilities:	59
Total estimated rated generating capacity of qualified facilities:	597.17 kW
Total estimated net kilowatt-hours received from customer-generators:	0 kWh
Total estimated amount of energy produced by the customer-generators:	732,888 kWh

SECTION 4: GENERAL INFORMATION

Director and Employee Development

Norris Public Power District Directors and employees participate in programs designed to develop and improve their skills and abilities, so they may provide quality service to our customers.

Economic Development

The District is very supportive of economic development activities and supports economic development for new or expanding customers in the following ways:

Economic development rate

Low-cost electric rates

Solid electric infrastructure

Provide electrical services with respect for the natural environment

Energy efficiency and assessment programs

Being supportive and working closely with state and local economic development organizations

Grassroots Initiative

With the future direction of America's energy policy uncertain, constituent advocacy is now more important than ever to ensuring Nebraska's electric consumers continue to enjoy affordable and reliable electricity. The Grassroots Initiative raises awareness of issues that impact electric consumers in Nebraska and the nation, including topics that impact the environment. Also, the Grassroots Initiative builds relationships with our elected officials and mobilizes direct communication between these representatives and consumers.