

IRRIGATION 2021

Control day or not: Who makes the call?

Weather and load control forecasts are hard to predict. Conditions change throughout the growing season.

“Our philosophy is to let irrigators run their systems as much as possible, while we make sure that Dawson Public Power District meets all the load management control requirements,” says Cole Brodine, Engineering Manager.

Dawson PPD receives load control direction from Nebraska Public Power District. NPPD buys and sells power through the Southwest Power Pool. The SPP also acts as a traffic controller, making sure power flows through a grid that links several states together.

Daily, NPPD and SPP make plans about how they will balance electrical generation to meet the needs of all the customers. That balance includes wind turbines, coal fired plants, hydro and nuclear generators as well as load management.

The daily plan considers weather, crop conditions, power line capacity, generators that are available to run and the cost to run each generation resource.

Once SPP has notified NPPD of their decisions, then NPPD makes a local plan for customers across the state. They announce this plan for each control group by 8:30 a.m. However, as the load varies, this plan can be altered. Dawson PPD notifies customers of the load management status for the day. The message is updated if NPPD’s plans change.

Dawson PPD’s load control system is programmed and it monitors the electrical loads. When the conditions are met, the system sends out codes that activate the controller unit. When the control period ends, a restore code is sent to the controller.

	2020	2019	2018	2017	2016
Days with load control	7	4	8	23	32
Hours per season	34	16	27	150	195

Power factor calculations will be used in 2022

When Dawson PPD upgraded electric meters, more information became available. Part of that information led to the ability to calculate the power factor of each irrigation service on the District’s lines.

“It isn’t a new charge,” explains Cole Brodine, Manager of Engineering. “We’re using our technology to measure the power factor and assign costs accordingly.”

The power factor adjustment takes the place of a capacitor charge assigned to services over 10 horsepower that do not have a capacitor or VFD installed. The capacitor charge has been in place since the 1970s.

The 2020 energy bill displayed the power factor reading for each irrigation service. The 2021 power

factor will print on the energy bill in the fall. A power factor below 90% will result in a higher calculated horsepower, used for the 2022 billing.

Dawson PPD posted a calculator at dawsonpower.com/calculator to help customers know what kind of effect their readings may have on future billings. The District also hosted an online meeting for irrigation technicians and an online meeting for customers.

Horsepower	Power factor	Calculated HP using Power Factor
25	85%	26.5
75	85%	79.4
100	70%	128.6
150	70%	192.9

The basics:

- Power factor was printed on the 2020 fall irrigation energy billing.
- The goal is a power factor between 90 - 100%.
 - Use a capacitor or a programmed VFD to achieve goal.
- Power factor correction is the customer’s choice. Install correction devices or be billed on the calculated horsepower.
- There may not be financial incentive to correct smaller horsepower systems with a power factor close to 90%.

Dawson PPD and CNPPID explore opportunities

Could a partnership provide better service to customers? Dawson Public Power District and Central Nebraska Public Power and Irrigation District have hired a consultant to explore the value of a possible merger. The study will look at assets, liabilities, facilities, contracts, labor, logistics, customer representation and legal issues.

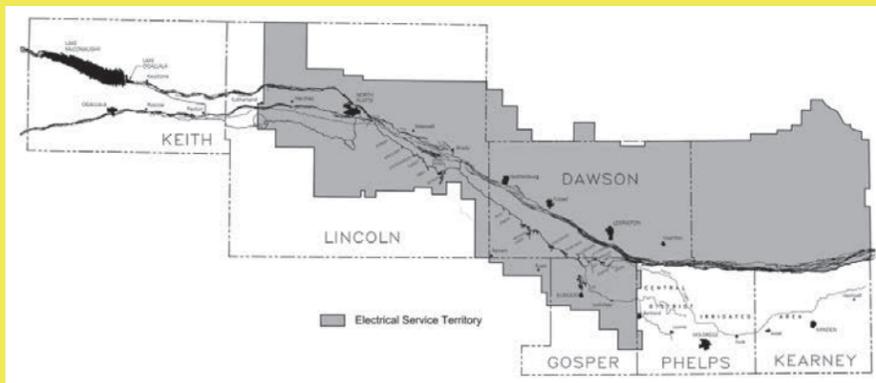
“As directors, part of our duty is to explore possibilities that may better serve our customers and position Dawson Public Power District for the future,” says Pat Hecox, board president.



Pat Hecox
Board President

Dawson PPD provides power to over 23,000 electric meters, including 5,792 irrigation accounts. The Central NPPID provides water to irrigation customers, recreational opportunities at area lakes and reservoirs and generates electricity with hydropower.

Both organizations are guided by an elected board of directors. As the phases of the study are evaluated, the results are presented to each board. There is an option to end the process at any time.



The service areas of The Central Nebraska Public Power and Irrigation District (shown in white) and Dawson Public Power District (shown in grey) are similar.

Info for irrigators is online

Learn about rebates and power factor by watching Dawson PPD’s 2021 irrigation meeting on the District’s YouTube channel. The presentation was originally broadcast on January 26.

www.YouTube.com/DawsonPublicPower

Load management option changes due	March 15
Fixed charges due	April 26
First day of possible load control	May 1
Last day of possible load control	September 15
Energy charges due	November 29

REWARDING CUSTOMERS FOR IMPROVING

ENERGY EFFICIENCY

Dawson PPD EnergyWise ag incentives in 2020

Corner pivot VFD	\$1,620
Prescriptive ag lighting	\$2,110
Prescriptive Irrigation	\$6,500

Rates are set for the 2021 irrigation season

The Board of Directors approved rate increases to take effect in 2021. The overall rate increase for irrigation customers is 2.44%. Irrigation rates increased \$1 per horsepower for the spring billing. Increases in the kilowatt hour charge vary by control option. This increase was part of a rate plan formed in 2019

Horsepower demand includes the whole irrigation system

The recorded demand for irrigation systems may exceed the nameplate demand of the electric motor. This is because the demand recorded by the electric meter includes the well motor, other devices and any potential efficiency losses at the site (line losses, well inefficiency, etc.). The demand used in billing is the peak demand set during the billing period.

Other reminders

Any irrigation well with a nameplate horsepower of 10 or less will automatically be billed on the uncontrolled rate for fixed charges and energy. These systems are not eligible to participate in the load management program.

All irrigation systems 10 horsepower or larger require a capacitor or VFD for power factor correction. If one is not in place, a charge is assessed. This capacitor charge has been in place since the 1970s and will be replaced with the new power factor charge in 2022.

Is an energy efficiency improvement worth the investment?

That’s a question best answered with some number crunching. Dawson PPD has incentives to help improve the cashflow on your spreadsheet.

“We have a variety of programs. If you’re considering an efficiency test or an improvement, call us. We may have a rebate program that fits,” explains Bobby Johnson, Dawson PPD Energy Specialist.

“Some of our programs have set amounts, like \$12 per variable frequency drive horsepower for a corner pivot VFD. We also have a \$500 rebate for replacing nozzels and sprinkler heads on your pivot system,” he explains. “Other incentives are customized to your specific project. For those custom rebates, call to see if the project qualifies and what the incentive amount may be.”

Why would the power company want me to buy less electricity from them?

The EnergyWise incentive programs encourage customers to use less energy, which in the big picture view will help all of us save money by not needing to build new generation units.

The EnergyWise Irrigation Program places focus on the many components of an irrigation system that need to be properly maintained so the system continues to run efficiently.

Weighing the cost and the benefit

Sometimes farmers make the comment “if it ain’t broke, don’t fix it.” That may look good on the annual financial expense statement, but what often can’t be seen

Projects eligible for EnergyWise incentives:

- Installing new sprinkler packages
- Replacing pressure regulators
- Reducing system pressures
- Replacing delivery system
- Installing variable rate irrigation systems
- Replacing or refurbishing pumps

is the cost of higher energy use due the irrigation system being inefficient. Plus, an inefficient system may not provide the appropriate amount of water to the entire crop, leading to lower bushels per acre at harvest time.

To maximize the profits in crop production, even the small, overlooked components of an irrigation system need to be addressed. The good news is that Dawson PPD may be able to lend a hand; with a financial incentive to help keep that irrigation system operating efficiently.

	2021		2020	
	Horsepower	Energy	Horsepower	Energy
Anytime	\$32.64	\$0.0629	\$31.64	\$0.0610
Four Day + Sunday	\$38.14	\$0.0754	\$37.14	\$0.0735
Three Day + Sunday	\$43.64	\$0.0816	\$42.64	\$0.0798
Two Day + Sunday	\$49.14	\$0.0879	\$48.14	\$0.0860
One Day + Sunday	\$54.64	\$0.0941	\$53.64	\$0.0923
No Control	\$60.14	\$0.1004	\$59.14	\$0.0985
Standby	\$22.50		\$22.50	

Horsepower rates are charged per HP of recorded peak demand. The demand portion of the rate is due April 26, 2021.

Energy rates are charged per kilowatt hour used. They are due November 29, 2021.

Off-season energy use

Billing timeframe: Energy used by an irrigation service between October 1 and March 1 is considered off-season or winter water. It is listed on the statement with the horsepower fixed charges.

Rate for energy used: Kilowatt hours are billed according the customer’s current load management option. Customers on a standby option during irrigation season will be billed at the no control kilowatt hour rate.

Fees: Customers on the Standby load control option will be charged \$100 to connect the service for off-season use. The fee is \$150 if the well needs connected after office hours. Wells used during irrigation season are available to use throughout the year.



PO Box 777

Lexington NE 68850-0777

A photograph of a red tractor with a large front-end loader bucket, parked in a field. The tractor is the central focus, with its bucket raised slightly. The background shows a clear blue sky and a utility pole with power lines. The overall scene is bright and clear.

Cultivate safety

Today's farming operations involve bigger equipment, which can make you more productive. However, failure to notice overhead power lines can be a deadly oversight. This planting season, remember to look up and look out for overhead power lines.

DAWSON PUBLIC POWER DISTRICT

In partnership with our suppliers, Nebraska Public Power District, we deliver energy to you.