



THE POWER OF LOAD MANAGEMENT

Chris Danielski monitors an irrigation pivot control panel from his phone app. Photos by Billy Gibson

Load control program reaps big rewards for both residents and large energy users

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Danielski Farms didn't become a blue chip producer over the past four decades by making boneheaded business decisions.

In 2013, the company was invited by Cherry-Todd Electric to participate in the cooperative's irrigation load management program. Load management is a term used to describe a co-op's ability to balance the system's electrical load by adjusting or controlling network demand.

Better balance brings greater efficiency and lower costs for all consumers on the system.

Len Danielski recalls pulling the leadership team together and weighing the pros and cons. The proposal included installing specialized equipment that would allow Cherry-Todd to temporarily interrupt power - when warranted - to any of roughly 200 irrigation pivots across 18,000 acres.

While different electric co-ops have their own load management policies, Cherry-Todd's guidelines call for a lower irrigation rate for participants and the right of the consumer to withdraw and return to the regular rate at any time.

The deliberation process was helped along by the fact that Danielski's General Manager Gary Garvin previously served as a board member at Cherry-Todd. He was aware the cooperative business model was designed and intended to produce "win-win" situations for both the co-op and its owner-members.

Danielski Farms ultimately decided to place all of its irrigation system under load management and Len Danielski reports the results have exceeded expectations.

"We found it was a winner all the way around. We have the choice to place one pivot, two pivots, or all pivots on the load control program, or none," he said. "We've analyzed the benefits over time and found that the company wins,

the cooperative wins and the co-op members win. It's a great partnership."

Chris Rahn, Cherry-Todd's primary key account contact, said load management is a tremendous benefit for members because it allows the cooperative - working in concert with both the member and the co-op's wholesale supplier Rushmore Electric - to distribute power more efficiently.

Rahn explained that one of the best ways to deliver power at the lowest possible cost is to "shave the peak" or to make sure supply and demand stay in a constant state of equilibrium as conditions such as weather, member consumption and market forces change constantly. Utilities are able to control supply but can find it challenging to project what consumer demand will be at any point in time.

Educated projections are important, but there are occasions when it helps for the co-op to have some control over demand. In the end, everyone benefits.

"We've had a residential water heater load control program for quite a while and it's been well-received by our

members,” Rahn said. “It enables us to get a better handle on the demand side and that’s a benefit for all the members on our lines.”

Garvin said another mitigating consideration for Danielski Farms is the fact that Cherry-Todd has done its part by making significant improvements to its infrastructure over time.

“We used to joke that we were always under load management because the power would go out a lot, but things have changed dramatically for the better and we hardly ever get bumped these days,” Garvin said. “I’ve also got load management on my water heater at home and it works for us.”

Len Danielski said that under the load control program power to his pivots rarely gets disrupted and typically only for a few hours when it does. He said the company is pleased to participate in a program that will ultimately benefit all co-op members across the system.



From left, Gary Garvin, Len Danielski, Chris Danielski and Chris Rahn discuss Cherry-Todd Electric’s load management program.

“We’ve found interruptions are usually during times when we don’t need to be irrigating anyway, like in the heat of the day when a lot of the water will only get evaporated,” he said. “And if it helps the cooperative and saves every member on the system some money, that’s great.”

Another element that makes the program work for Danielski Farms is the installation of a remote irrigation control system. All of Danielski’s pivots



All of the roughly 200 irrigation pivots at Danielski Farms are under Cherry-Todd Electric’s load management program.

are connected to the Ag Sense phone app that enables a user to turn the pivots on or off individually or in groups, and receive an abundance of electronic data.

Chris Danielski manages the app and said the telemetry allows him to track exactly when load control is being implemented, though he usually receives information from the co-op as well. He said efficiencies gained through both programs have resulted in net savings.

“If we have an hour or two of load management, once we get the notice that we’re back on I can restart the pivot from inside the office,” he said. “It used to take several hours to get someone to go out and restart the system.”

East River Electric, based in Madison, is a power supply cooperative that delivers wholesale electricity to 24 distribution co-ops in eastern South Dakota and western Minnesota. East River has offered its co-ops a load management option since 1985 and has saved members roughly \$260 million in avoided wholesale power costs.

More than 75,000 different electric loads in homes, farms and businesses are connected to the system, including water heaters, air conditioners, irrigation systems and other big energy users.

Chris Larson, general manager of Clay-Union Electric, said the co-op based in Vermillion offers end-use consumers a load control program for

water heaters, irrigation systems, grain bins and other commercial processing equipment.

The cooperative has 320 irrigation systems under load management with requests for 10 more in the near future as drought conditions show no signs of abating.

Larson emphasized that every cooperative has its own unique rate structure and load management policies when it comes to discounts, demand charges, time-of-use, system peaks and other variables. He said it’s important for consumers to contact their local co-op for details and to work closely with staff to find the best solutions for the member.

He said co-ops are obligated to capture their costs of providing power but are also responsible for finding ways to accommodate their member-owners and helping them achieve their individual goals.

“Load management really is essential to maximizing system efficiency,” Larson said. “It’s a sophisticated process that ultimately leaves the member with plenty of choices. If we’re controlling irrigation or commercial operations at a time that’s not good for them or complicates their workflow, they need the ability to override the control system so they can make a good business decision that’s best for them.”