



Tim Stewart, CEO/Manager

Load Management: Balancing Supply and Demand

New Strategies Benefit the Cooperative Membership

This month I would like to focus on load management and the important role it plays in the regional power market. As you likely know, Dairyland Power Cooperative is Clark Electric Cooperative's wholesale power supplier, providing our cooperative with the energy required to meet your energy needs. Clark Electric Cooperative and Dairyland Power Cooperative collaborate on strategies to best increase efficiencies and decrease costs for the benefit of our members.

Traditionally, Dairyland's load management program functioned primarily to reduce energy consumption during periods of peak demand, mainly as a way to reliably meet member energy needs while curbing costs.

In essence, that original goal still stands: Load management remains a tool used to balance the demand for electricity with the ability to generate or economically purchase electricity. Dairyland and its member cooperatives save money by deferring the need to construct additional power plants or purchase expensive power during periods of high demand.

Did you know?

The item most often controlled for economic purposes is water heaters.

How Does the Load Management Program Work?

Through Clark Electric Cooperative's wholesale power supplier, Dairyland Power Cooperative, we have long participated in an energy—and money—saving program called load management. The program traditionally offers benefits to cooperative members who agree to electric use control during times of peak demand or high energy prices, or during system problems such as a generator outage.

Dairyland estimates the load management program reduces its system peak by approximately 70 megawatts (MW) in the summer and 140 MW in the winter...the equivalent size of a small power plant. It has done so by reducing total demand during peak use hours—generally

between 3 and 9 p.m.—when people are commonly at home running washers, dryers, dishwashers, air conditioners, heaters, and so on.

For example, your air-conditioning unit might be cycled on and off at 15-minute intervals for a few hours on a day load management was utilized, if you are a program participant. Home comfort is not diminished, but the energy and financial savings aggregated through participation across the Dairyland membership are significant. Other load management loads include water heaters, and electric heating applications (dual fuel and storage heat). By signing up for load management, you get a ▶

What is "economic control" and why do we do it when we do?

As we mentioned earlier, load management based on economics is another tool used to reduce overall energy costs for Dairyland, and therefore for the member-consumer. It utilizes the control of certain appliances (residential water heaters, air conditioners, interruptible heating systems, dairy water heaters) during one time of day, usually to be restored at a later time of day when energy prices are more favorable.

Because economic-based load control typically involves that shifting of energy use from one time frame to another, the value of that control event depends on hourly energy prices. System operations staff take into consideration both the "avoided cost" of removing certain loads during the control period and the "incurred cost" of bringing the controlled appliances back on during the restoral period.

To ensure the load management program is doing its job most effectively, results of various control techniques are continually analyzed. Analysis of historical energy prices consistently indicates that control periods with the greatest opportunity for energy cost savings occur during the evening when hourly energy prices decline quickly. This period of economic control may include a few hours that are generally considered "off peak." Not unlike diversifying or spreading one's financial risk in the stock market, economic control is simply about shifting load from a less advantageous pricing period to one with an increased chance for gains.



direct savings as well as help the cooperative save on our wholesale bill, which in turn helps reduce everyone's power bill.

Controlling for Capacity and Energy/Economics

Dairyland relies on load management resources for more than peak load reduction since joining the Midcontinent Independent System Operator (MISO) as a transmission-owning member in June 2010. Load management is now also used as an economic tool to reduce wholesale energy costs, to the benefit of cooperative members.

Prior to joining MISO, Dairyland produced power from its own generating facilities or purchased energy directly from a neighboring utility to provide the needed electricity for its member cooperatives. By joining MISO, Dairyland's generation resources are now offered into the wholesale energy market and are therefore affected by the energy used and produced across the region. All generation is dispatched into the MISO market for regional requirements, and sold to MISO based on market prices. Similarly, all of Dairy-

land's load requirements are purchased from MISO at market prices.

Dairyland now needs to plan differently and make changes in both operating its power plants and marketing the energy. Simply put, Dairyland cannot just dispatch power from, for example, its facility in Genoa anymore to fulfill direct needs.

Therefore, if the current or projected day-ahead market price to purchase energy is too high, Dairyland may now implement load control as a way to mitigate the need to buy high-priced power. A price threshold, on which to base the decision to implement load management or buy power in an inhospitable market, is set to ensure a reasonable number of control events each season. ■

About MISO

MISO ensures reliable operation of and equal access to high-voltage power lines in 15 U.S. states and the Canadian province of Manitoba. MISO manages one of the world's largest energy markets. As a Regional Transmission Organization, MISO assures consumers of unbiased regional grid management. The non-profit organization is governed by an independent board of directors and is headquartered in Carmel, Ind., with operations centers in Carmel and St. Paul, Minn. For more information, go to www.misoenergy.org.

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We all have someone on our shopping list who seems to have everything. How about giving them the gift of energy with a gift certificate from Clark Electric Cooperative? If they receive electric service from Clark Electric Cooperative, contact our Billing Department at 715-267-6188 or 1-800-272-6188 to learn how to obtain a gift certificate.



Unwrap Winter Energy Savings

The holidays are upon us! It's that special time of year when we spend a great deal of time with friends and family, either in the kitchen or out and about shopping for the perfect gift. As you find yourself wrapped up in the holiday excitement, Clark Electric Cooperative reminds you of a few ways to be energy efficient during this busy time of year.

Cooking Efficiently

- Be kind to your oven. Every time you open the oven door to check on that dish, the temperature inside is reduced by as much as 25 degrees. This forces the oven to use more energy in order to get back to the proper cooking temperature. Try keeping the door closed as much as possible. Also, remember to take advantage of residual heat for the last five to 10 minutes of baking time—this is another way to save energy use. If you're using a ceramic or glass dish, you can typically set your oven 25 degrees lower than stated since these items hold more heat than metal pans.
- Give your burners some relief. The metal reflectors under your stovetop burners should always be clean. If not, this will prevent your stove from working as effectively as it should.
- Utilize small appliances. During the holidays, the main appliances used are the oven and stovetop. Try using your slow cooker, microwave, toaster oven, or warming plate more often. This will result in substantial energy savings.



Home Efficiency

- Take advantage of heat from the sun. Open your curtains during the day to allow sunlight to naturally heat your home, and close them at night to reduce the chill from cold windows.
- Find and seal all air leaks. Check areas near pipes, gaps around chimneys, cracks near doors and windows, and any unfinished places.
- Maintain your heating system. Schedule services for your heating system before it gets too cold to find out what maintenance you may need to keep your system operating efficiently.
- Eliminate “vampire energy” waste. When you are not using an appliance or an electronic, unplug it to save energy. Power strips are definitely a good investment for your home.

Efficient Shopping

- Purchase LED holiday lights. A string of traditional lights uses 36 watts of power and a string of LED lights only uses 5 watts. They can even last up to 10 times longer!
- Ask for Energy Star-rated TVs and appliances. This will save you a lot of power use because the standby-mode is lower and the device will use less energy overall.
- Combine errands to reduce the number of small trips. To-do lists seem to pile up around this time of the year. Believe it or not, several short trips in the winter can use twice as much fuel as one longer trip covering the same distance as all of the shorter ones.



Being energy efficient is usually not top priority when celebrating the holidays, and most of us don't realize the lack of efficiency until the next bill comes in. Prevent your post-holiday shock this year by thinking creatively and remembering all of these tips. ■

SAFETY REMINDER: *Don't Get Attached to Our Poles*

For the safety of the general public and our linemen, Clark Electric Cooperative would like to remind everyone not to attach items to our power poles. A utility pole may seem like a convenient place to hang a sign, decorate for the holidays, attach a fence or gate, and maybe even put up a hunting stand, but that is not the case. Utility wires that are attached to these poles carry large amounts of electric energy—thousands of volts in most cases. This is enough energy to cause severe injuries or even death.

For your safety you



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should never attempt to climb, use a mechanical lift, or be elevated in any way, for any reason on or near utility distribution equipment.

Attempting to climb around or attach items to a utility's distribution equipment is extremely dangerous to the general public. Attaching signs, gates, fences, and things of that nature can create hazards for our linemen to climb around.

Items attached to Clark Electric Cooperative property may be removed any time at the discretion of cooperative personnel. Items that pose a safety hazard for our linemen or the general public will be removed immediately. ■



Attaching holiday decorations to electric utility poles is dangerous!



Clark Electric Cooperative

Your Touchstone Energy® Partner



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