Tim Stewart, CEO / General Manager

Dairyland's Power Plant Operations See Changes with Midwest ISO Membership

Dairyland became a member of the Midwest Independent System Operator (Midwest ISO) on June 1, 2010. Since joining the Midwest ISO's energy market, Dairyland's plant operations have changed in a number of areas, including how our facilities are utilized. As purchased power costs represent more than 71 percent of Clark Electric Cooperative's total cost, these changes will have an effect on Clark Electric's cost structure. This month, I thought you might enjoy an article prepared by Dairyland Power Cooperative that highlights some of those operational changes.

Background on Regulations

Historically, Dairyland produced power from our own generating facilities, or purchased energy from a neighboring utility, when needed, to directly provide our member cooperatives with energy.

For many years Dairyland was a member of MAPP (Midcontinent Area Power Pool) which was designed to provide regional reliability. All members of MAPP, including Dairyland, were responsible for providing enough energy for the load in their own service territory and for maintaining a minimum generating capacity reserve of 15 percent capacity of their own load. The 15 percent excess capacity was required to ensure that the region had sufficient energy to supply all consumers should an outage occur within the pool membership.

In the late 1990s, new regulations promoted deregulation in the utility industry to encourage competition, open up access to transmission facilities, and establish rules and standards to achieve these goals. Regional transmission organizations like the Midwest ISO grew out of the "open access" concept and led to the creation of energy markets, which allow generating entities to offer their generation resources into a broader marketing region.

Current Energy Market under the Midwest ISO

Today, the Midwest ISO energy market function dispatches the generation resources of its members in a manner designed to provide the most cost-effective energy available.

As more energy is needed, more generating resources are required, and the Midwest ISO schedules those units based primarily on the operating costs, or market bids, of generation offered into the market. The market price of energy in the pool is based on the cost to bring on the next higher costing generator. The market price includes the cost of transmission line losses and congestion of the transmission system based on where the energy is used. Generally speaking, as demand goes up, so does the price of energy.

During times of low energy demand, this new market may not require all generators to produce power if others in the "pool" can better meet the regional needs at that time. Therefore, Dairyland may not need to run its facilities in the same ways it did in the past.

Impacts to Plant Operations

Determining which facilities should operate at any given time is based on the energy requirements of consumers, along with a number of factors which can include:

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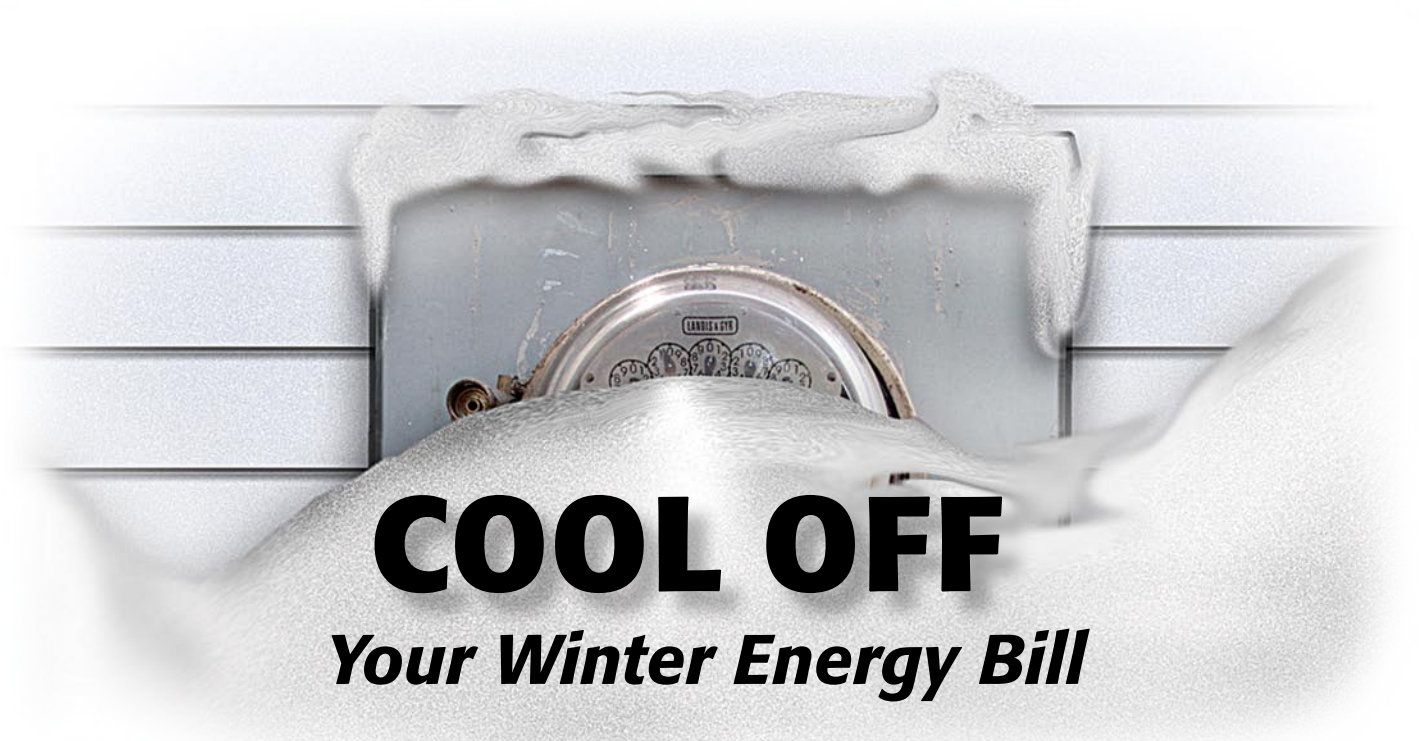
Membership in the Midwest Independent System Operator (Midwest ISO) has changed the way Dairyland Power Cooperative's generating plants operate. For example, Genoa Station #3, pictured here, remained off-line for several days this past fall when energy consumption was down due to mild weather. Other generators in the Midwest ISO were able to more economically meet the energy needs during this time.



COOL OFF

Your Winter Energy Bill

You've budgeted for holiday gifts, meals, maybe a vacation—and with money tight, that doesn't leave much room for home energy efficiency upgrades. Does that mean you're powerless to lower your electric bill? Not at all. Keep your energy bill cool this winter with these tips and tricks:

- **Drape delivery:** Are you using your curtains to capture heat? Make sure drapes and shades are open to catch free solar heat during the day. Close them at night to keep the heat inside.

- **Thermostat:** Set your thermostat to 68° F (or lower if comfortable).

- **Got tape?** Though not as durable as foam, rubber, or vinyl, you can use non-porous tape (first aid cloth tape, for example) to keep cold air from squeezing into your home. Tape is good for blocking corners and irregular cracks, and can be used at the top and bottom of a window sash; door frames; attic hatches; and inoperable windows. Reinforce with staples if needed.

- **Fan it up:** Run ceiling paddle fans on low and reverse the rotation to blow air up in winter. This keeps warm air circulating without cooling you.

- **Free vents:** Your HVAC system will have to work twice as hard if your air registers and vents are blocked by rugs, furniture, or drapes. Keep them clear to allow air to flow freely.

- **Garage drain:** Leave your garage door down. A warmer garage in winter will save energy.

- **Rug relief:** Have a spare rug? Use it to cover bare floors for added insulation.

- **Cool food:** Don't make your refridgerator work harder than it has to. Clean the coils every year, and set the temperature between 34°-37° F; leave the freezer between 0°-5° F. Keep the freezer full—frozen food helps your freezer stay cool. When cooking, keep lids on pots, and let hot food cool off before placing it in the refrigerator.

- **Hot savings:** Heating water accounts for 12 percent of your home's energy use. Set your water heater temperature no higher than 120° F. For households with only one or two members, 115° F works.

There are other ways to conserve energy, too. Remember, you don't pay for what you don't use. When you're not watching TV or using lights, computers, and other electronics, turn them off. Lower your room temperatures a bit and wear a sweater to stay warm, or place an extra blanket on the bed at night. Find more ways to save at www.TogetherWeSave.com. ■

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Holiday Hours

Clark Electric Cooperative's office will be closed on Friday, December 24, and Friday, December 31, to observe the Christmas and New Year holidays.

The Appliance and Satellite office will be open from 8:00 a.m. to 12:00 p.m. on Friday, December 24, and Friday, December 31. The office will be closed on Saturday, December 25, and Saturday, January 1, to observe the holidays.

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Midwest ISO Membership

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- Minimum operating requirements of the facilities —some large plants are unable to "idle" or cannot efficiently operate below a certain operating threshold
- Many renewable energy resources are less predictable and intermittent, providing energy regardless of prevailing market prices (i.e.wind turbines and solar panels, which only operate when the resource is available)
- Economics (fuel and production costs)
- Transmission congestion (delivering energy to location of load without overloading transmission lines and substations)
- Seasonal weather—directly impacts the amount of energy used by consumers

For example, the mild autumn weather this year has caused lower energy consumption throughout the Midwest ISO footprint, mainly due to the lack of either heating or air conditioning. Following scheduled maintenance at Dairyland's 365 MW Genoa Station #3 (G-3), the facility remained off-line for several days due to this decreased need for energy. The combination of start-up and production (mainly fuel) costs, along with the fact that G-3 is a 24-hour baseload facility, made it more economical, overall, to delay starting the unit until energy use increased in the region, along with the accompanying higher market prices.

Additionally, there are opportunities to buy economically priced energy during periods like this where Dairyland can take advantage of purchasing some energy to meet our members' needs, while reducing generation when the overall economics allow us to optimize the opportunities to reduce our cost to serve our members.

However, after a very productive operational period during the summer months, staff has taken advantage of the downtime to perform maintenance and ensure that G-3 operates as efficiently as possible.

Dairyland's power plant operations have always been directly impacted by the level of energy consumption of the members in our system. That's why we typically scheduled maintenance in the spring and fall when usage was historically lower due to mild weather.

Dairyland's power plant operations are now impacted by the energy consumption and available supply in a much larger region. Dairyland's generation units account for about 1 percent of the generation assets in the Midwest ISO market, which reaches into13 U.S. states and the Canadian province of Manitoba. Therefore, weather patterns and the consumer base are now different, and energy consumption and available generation throughout this regional area impacts our operations in many different ways. ■

Happy Holidays

The holiday season brings to mind all sorts of memories about experiences and days gone by, such as decorating and lighting the Christmas tree, anticipating the aroma of home-baked Christmas cookies, or sharing together with our families and friends. Whatever memories you have from the past, it's the time of year when our actions can become part of warm memories for others and ourselves in the future. Sometimes we forget that it's those little things we do for others that can mean so very much. All of us at Clark Electric Cooperative hope you and your family has a safe and a very joyful holiday season.