Dairyland Power Cooperative is one of six generation and transmission companies that serve the member-owners of the 44 distribution electric cooperatives located in the state of Minnesota.
Headquartered in La Crosse, Wisconsin, Dairyland was created in 1941 and serves 25 distribution cooperatives and 17 municipalities located in the four Midwestern states of Wisconsin, Illinois, Iowa and Minnesota. We have 235,000 member-customers representing nearly 600,000 people.

Electricity in the Dairyland system is generated at coal-based facilities in Genoa and Alma, a natural gas plant at Elk Mound, a hydro facility near Ladysmith, and numerous renewable energy projects in all four of the states that we serve.

Our coal-fired plant at Alma is served by rail, and receives coal shipments year round. Dairyland's risk management plan sets a target of 30 -50 days of coal inventory on hand in order to mitigate fuel supply disruptions.

Our coal-fired plant at Genoa is served by barge, which means we annually have a 7 month window of opportunity to receive coal while the river is open for commercial navigation. Our risk management plan calls for approximately six months of coal inventory stockpiled by the time the river is closed to commercial navigation each fall.

The coal Dairyland uses comes from the Powder River Basin in Wyoming which the BNSF railroad delivers by rail either directly to our Alma plant, or to a river port in southeast Iowa – and then is barged up the Mississippi River to our Genoa plant. Combined, our two plants use approximately 140 train loads of coal annually. Each train set consists of 120 cars.

Last winter

Dairyland's rail delivery problems to the Alma facility began last fall. Rail cycle times began to slow in October, and became even slower during the winter months. Since rail deliveries of coal were not keeping up with our burn rate, fuel inventory levels at our Alma plant fell below 10 days of supply by February. In order to avoid running out of fuel and shutting down the plant, Dairyland took several actions to conserve coal:

-Dairyland operated the Alma plant less and purchased replacement electricity from the market in lieu of generating it ourselves.

-Dairyland purchased coal from other sources and had it delivered up to 80 miles by truck. This is not a desirable course of action since it takes 630 truckloads to equal one train set, is time consuming, costly, and exacerbates highway congestion.

-Dairyland extended our normal maintenance period of the Alma plant this spring to conserve coal, buying replacement electricity from the market as needed.

-By late spring, Dairyland was able to rebuild coal inventories at our Alma plant back to within our risk management target range though extensive use of coal conservation efforts – in spite of continuing slow cycle times by BNSF.

This summer:

Even as Dairyland was rebuilding coal inventory at Alma, attention was now drawn to our Genoa facility. Since the coal to Genoa is delivered by barge, we only have a 7 month window of time to receive a full year supply of coal.

At the rate the BNSF was delivering coal from the Powder River Basin to the Mississippi River port, we would not be able to build enough inventory to operate the Genoa plant through the coming winter. Replacement power purchases during this period of high demand can be very expensive and would pose a high financial risk to Dairyland and our member consumers.

By mid - July the BNSF had shipped only half of the usual amount of coal destined for the Genoa plant. Each week that went by made possible solutions more challenging. With half of the shipping season already gone, BNSF would have to triple their normal frequency of deliveries for the remainder of the season in order to meet our inventory target.

Dairyland staff was in frequent communications with BNSF staff about delivery shortfalls. BNSF acknowledged our concerns, acknowledged they were not meeting our expectations, but were slow to develop an action plan. However, by August the BNSF accelerated coal deliveries to the Mississippi River port for barge loading and delivery to Genoa. There were more trains sets delivered in the month of August than during the months of May, June, and July combined. By the time the river closed to navigation, Dairyland was able to rebuild our coal inventories to within 12 % of our normal inventory expectations. While a big improvement compared to July, it still means that Dairyland will have to engage in coal conservation measures at our Genoa plant between now and river opening next spring.

Meanwhile, rail service to our Alma site over the course of the summer continued to struggle. August deliveries were less than any prior month this year, even less than during the polar vortex of last winter. At the end of August, our inventory at Alma was 50-70 percent below our target range. The BNSF took actions to increase coal deliveries to the Alma plant this fall, and Dairyland used a two month scheduled maintenance outage this fall to rebuild coal inventory back up to normal expectations in preparation for the winter season. It remains to be seen if coal deliveries during the winter months will keep up with our normal burn rate, or if our coal inventory at JPM will once again fall to dangerously low levels by spring.

Related policy consideration

Last winter's polar vortex conditions resulted in higher demand for energy, which in turn resulted in disruptions in propane and natural gas supplies. It became evident last winter that even a brief disruption in natural gas delivery will prevent the operation of natural gas power plants. In contrast, coal-fired power plants have the capability to stockpile fuel on site—providing reserve fuel supplies in the event of delivery problems.

As the state begins the process of crafting rules to implement EPA's goal to transition from coal to natural gas in order to reduce CO2 emissions, policy makers need to be aware of the reliability implications. Not only will natural gas pipeline infrastructure have to be expanded, it may be necessary to construct pipeline redundancy in order to minimize the risk of supply disruptions – especially during the coldest days of winter when demand for energy is very high and the consequences of a disruption in the electricity supply would be most severe.