

GreatRiver NEWS

For the Member Systems, Friends and Employees of Great River Energy

CapX2020 construction is flying high

With the kickoff of construction on the Bemidji-Grand Rapids project and the wire stringing on St. Cloud-Monticello, CapX2020 continues to move forward.

CapX2020 is a joint initiative of 11 transmission-owning utilities in Minnesota and the surrounding region to expand the electric transmission grid to ensure continued reliable and affordable service. Planning studies show that customer demand for electricity will increase 4,000 to 6,000 megawatts by 2020.

The new transmission lines will be built in phases designed to meet this increasing demand as well as to support renewable energy expansion. Here are updates on all CapX2020 projects:

St. Cloud-Monticello:

Workers along Interstate Highway 94 west of Monticello, Minn. are generating lots of attention as conductor is being strung by the Air 2 helicopter



Workers from Air 2 attach pulleys that will be used to string conductor between towers. Helicopter installation is faster and more efficient than using ground-based cranes in this area.

firm. CapX2020 officials worked closely with the Minnesota Department of Transportation, local media and local government officials to inform residents and drivers about the work, and to encourage them to pay attention to traffic around them, not the construction activity. Helicopter work will continue through October. Work at the new Quarry substation is pro-

gressing well. The project is expected to be energized in late 2011.

St. Cloud-Fargo:

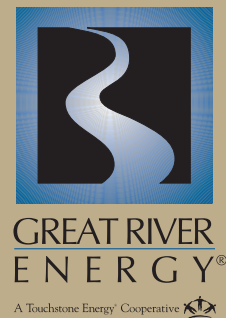
The Minnesota Public Utilities Commission approved the Route Permit for the Fargo-St. Cloud project. Construction will begin in 2012. Right of way agents are beginning to contact landowners along the project route.

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Bemidji-Grand Rapids:

Right of way has been cleared and structures are being set. Construction will continue through 2012; the line will be energized in late 2012 or early 2013.

Hampton-Rochester-LaCrosse:

Public and evidentiary hearings were held in the project's Route Permit proceeding in June. The Minnesota Public Utilities Commission is expected to make a final decision on the Route Permit in late 2011. Hearings for the Wisconsin's Certificate of Public Convenience and Necessity are expected in early 2012.

Brookings County-Hampton:

Detailed design, engineering and procurement activities continue on the project. Easement purchases have begun as landowners are being contacted along the project route. Construction is expected to begin in the second quarter of 2012 with the line energized in 2015.

MISO granted the project conditional approval for Multi-Value Project status in June. The classification, expected to be made final in December, will allocate the cost of the project across the entire MISO footprint, which extends into 12 U.S. states and Manitoba. Several other projects in the upper Midwest are also being considered for the new classification.

Load management beats summer heat

Although electric utilities generate and sell electricity, almost every kilowatt-hour produced is at one time bought and sold in a commodity market. That means when electric demand increases, prices do the same.

On hot summer days when large portions of the population rush inside to their televisions and air conditioners, the price of electricity can skyrocket. Great River Energy has spent decades developing a unique portfolio of resources that helps its members avoid high-priced energy during times of high demand. Known as load management, Great River Energy is an industry leader in finding ways to reduce its electric load at the times when it's most valuable, and at other times increasing or shifting load when it is economically

advantageous to Great River Energy and its member cooperatives.

Load management options include cycling air conditioning as well as interrupting electrical service to water heaters and irrigation. Some commercial and industrial end-use members have even agreed to have electrical service suspended entirely for short periods while they use their own standby generation for replacement power. Because these are performed through a radio signal, the process is nearly seamless and in some cases cooperative members are unaware that load management is even being performed.

Great River Energy has more than 265,000 summer controlled loads on its system which allows the cooperative to shed approximately 350 megawatts of electrical load. Most participating mem-

bers receive an incentive in exchange for control of certain electrical devices.

During the summer of 2011, particularly during a very hot month of July, Great River Energy's load management system performed well and delivered on its goal of reducing power costs for Great River Energy members.

Load management offers other benefits to Great River Energy and its member cooperatives. It can improve system economics by shifting electric consumption to lower cost periods, reducing system losses and deferring the need for capital expansion.

For example, Great River Energy and its member cooperatives offer programs that shift electric load to the off-peak hours of 11 p.m. to 7 a.m. when electric demand is minimal and power prices are relatively low.

Study puts price on energy efficiency

According to a new study conducted by the American Council for an Energy-Efficient Economy (ACEEE), the right energy efficiency policies could lead to significant energy cost savings.

The study used Missouri as an example and found that the state could save \$6.1 billion in energy costs by 2025 with the appropriate mix of policies.

ACEEE saw Missouri as a state where recent legislation initiated regulatory changes encouraging energy efficiency investments by electric utilities, but where the impact of that legislation had yet to fully emerge. The 2009 Missouri Energy Efficiency Investment Act made it state policy to place equal value on demand-side investments and traditional investments in electric utility infrastructure.

The report recommended 10 state-level policies, including regulated energy efficiency targets that would be voluntary for electric cooperatives and municipal utilities, which are not regulated by the state public utilities commission.

Spiritwood Station announces 2012 operational plan



Great River Energy will not operate Spiritwood Station's main boiler in 2012 due to low prices in the energy market and reduced demand for electricity.

Great River Energy recently announced it will not operate Spiritwood Station's main boiler in 2012.

The change in Spiritwood Station's operational plan is primarily due to low prices in the energy market and reduced demand for electricity. However, a turn-

around in the economy could increase market prices and result in routine operation at Spiritwood Station.

Also, the development of a proposed second steam host, the Dakota Spirit AgEnergy biorefinery, at Spiritwood, could improve the power plant's economics. The proposed biorefinery could

be constructed in late 2013.

Although Great River Energy doesn't plan on operating Spiritwood Station's main boiler in 2012, startup activities are underway, with completion expected by the end of the year. This will make the unit ready for commercial operation. During startup activities, DryFine lignite will be delivered to the site.

The change in Spiritwood Station's operational plan is primarily due to low prices in the energy market and reduced demand for electricity.

Commissioning of the turbine began in late August, and the plant has already synced with the grid the week of Aug. 29, via natural gas. The plant began using DryFine coal the first part of September, and the plant will be fine-tuned through the end of the year.

During 2012, employees will perform maintenance activities to preserve the main boiler equipment in a "laid up" condition. Current plant employees will remain onsite to conduct maintenance work.

Wet conditions lead to messy mining

If you've ever tried to dig a hole in wet soil, you know that a little water can make for a lot more work. You dig and dig, but dirt always finds its way back into the hole.

Workers are facing a similar situation at Falkirk Mine, the fuel source of Great River Energy's largest power plant, Coal Creek Station.

Record precipitation has led to immense flooding across much of North Dakota and saturated soil to the point that mining has slowed. In fact, wet soil sliding back onto coal seams is expected to result in an additional 9.5 million cubic yards of soil that must be removed in 2011. Not only does the soil have more moisture, there's also more soil.

The ease with which a mining company can access coal reserves is expressed by a "strip ratio," which is a calculation of the number of yards of earth that must be removed in order to mine one ton of coal. Coal seams with a lower strip ratio can be mined more efficiently because they require the removal of less "overburden," or the earth that lies above coal seams.



Heavy precipitation and deeper coal seams are leading to additional work and costs Falkirk Mine, the fuel source for Great River Energy's largest power plant.

The entirety of the Falkirk Mine has a calculated strip ratio of 9:1. Past mining plans have involved mining coal with a strip ratio of 6:1. Currently, coal is being mined with a strip ratio of approximately 10½:1.

Heavy rain and deeper overburden means more fuel, workers and tires – and higher costs.

Although these cost increases are significant, Coal Creek Station still provides some of the most cost-effective electricity in the region. The plant was designed and built with one goal in mind: lowest long-term costs. Its most significant advantage is its location. The plant was sited near Underwood, N.D. due largely

to its proximity to the coal reserves of the Falkirk Mine.

By building the plant near its fuel source (known as a "mine mouth plant") Great River Energy minimized fuel transportation costs, which left mining (i.e., getting coal out of the ground) as the most significant variable cost.

As a member-owned cooperative, Great River Energy knows that its membership trusts that it will find the most cost-effective way to provide power. Great River Energy is exploring new ways to overcome the latest challenge so that its members across Minnesota continue to receive reliable, affordable power.

Work begins on challenging tree removal project

Contractors have begun removing trees along a 10½-mile segment of Great River Energy's 230-kilovolt "PE" line in the Elk River, Ramsey and Andover areas of Minnesota. The trees are too close to the power line and need to be removed for the safety and reliability of the system, and to maintain compliance with ever-stricter standards from the North American Electric Reliability Corporation (NERC).

Working with property owners to remove trees along power lines is often challenging and the history of this transmission line, along with tougher NERC standards, makes this project more challenging than usual.

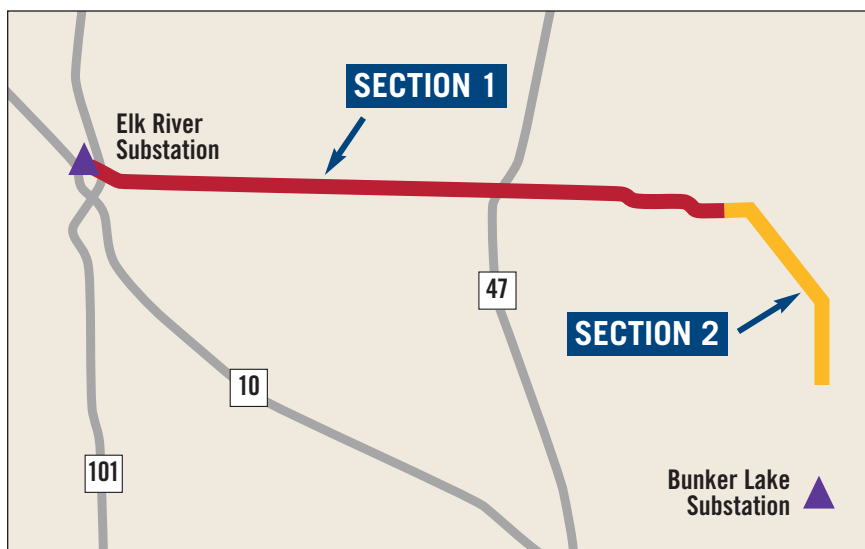
According to Byron Johnson, Great River Energy's supervisor of vegetation management, when this transmission line was purchased from another utility in 2003, it had not been maintained to Great River Energy's standards. Since then Great River Energy has been slowly working with landowners to widen the clear area around the power line.

Great River Energy has easements with landowners along the transmission line, which provide Great River Energy the

rights to remove trees and manage vegetation within the right of way, or the strip of land defined in the easement. Great River Energy has previously allowed some trees and shrubs to remain in the outer 35 feet of the right of way, but now Great River Energy needs to remove most trees in the full width of the right of way.

"We have tried to find a balance between maintaining the line and not causing a lot of hardship to property owners," said Johnson. "But now that NERC standards have become stricter, we are at risk for significant fines. We have to finish clearing the rest of the right of way."

Approximately 160 landowners along the line received letters and a Q&A on the project. According to Rick Heuring, senior field representative in Great River Energy's land rights department, the project is going fairly smoothly to date considering that there are many landowners who will be losing a number of trees. Work on this segment of the transmission line will continue through the end of the year. In 2012, work will begin on the remaining 3.8 miles.



Line restored faster using information from LIDAR project

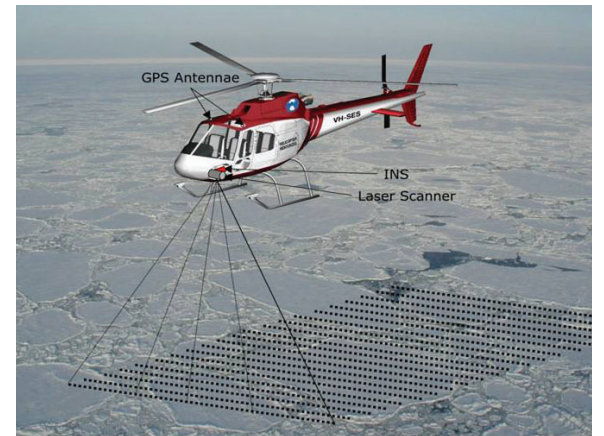
When severe weather destroyed transmission line towers and cut off Great River Energy's largest power plant from providing electricity to cooperative members in Minnesota, the repairs went a lot quicker as a result of new technology.

Great River Energy surveyed the entire path of most of its transmission lines in 2011 using special technology called light detection and ranging equipment (LIDAR). The \$4 million project documented the facility ratings on all of Great River

Energy's transmission lines that operate at 100 kilovolts and above, about 1,500 miles of line. The benefits are already becoming apparent – LIDAR saved line outage time worth \$1 to \$1.5 million during a recent outage of Great River Energy's direct current (DC) line.

The project was initiated following a recommendation from the North American Electric Reliability Corporation (NERC) that all utilities confirm their facility ratings are accurate.

The survey data became valuable fast when developing the temporary design for the section of the DC line that was destroyed on Aug. 1. In fact, the data needed arrived at 10 a.m. the morning of the outage.



Using LIDAR technology, Great River Energy surveyed the entire path of most of its transmission lines in 2011.

"The DC line would have been down two or three more days if we hadn't had all of the survey data points that we obtained from the LIDAR project," said Jim McGuire, Great River Energy's supervising engineer, transmission engineering and design.

The intended use for the LIDAR data, assessing facility ratings, will be equally valuable. Facility ratings are important because they ultimately determine the amount of electricity that can safely or reliably be transmitted.

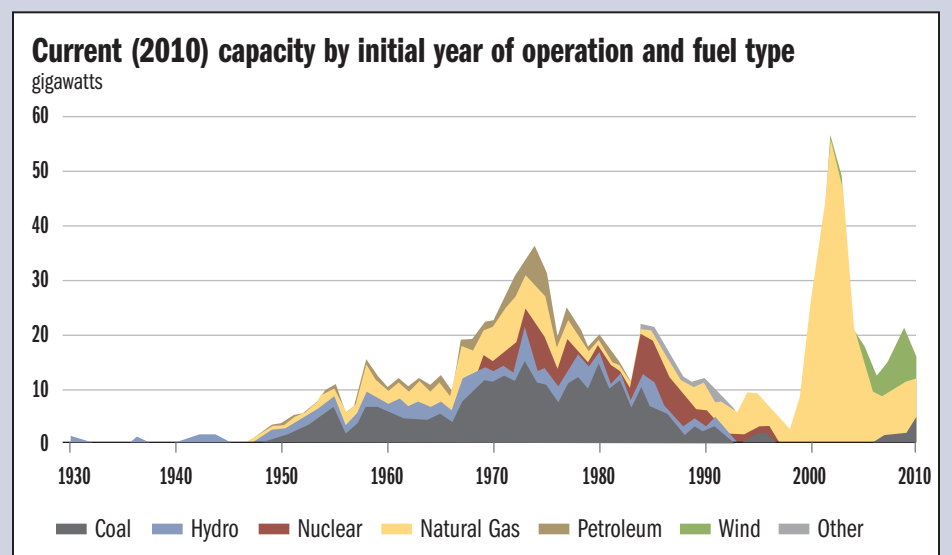
Generational shifts

There are many ways to make electricity. And just like fashion and music, you can tell a lot about the method used to generate power simply by knowing the time period in which it was created.

The current fleet of electric power generators has a wide range of ages. About 530 gigawatts, or 51 percent of all generating capacity, were at least 30 years old at the end of 2010. The most seasoned power plants tend to be hydropower generators and most coal-fired plants were built before 1980.

Nuclear rode a wave of construction from the late 1960s until about 1990. The most recent generating capacity additions included natural gas-fired units in the 2000s and renewable units, primarily wind, coming online in the late 2000s.

In fact since 2006, 36 percent of total electric power industry capacity additions have been wind generators.



Source: U.S. Energy Information Administration

RFP issued for renewable energy resources

In late August, Great River Energy issued a request for proposals (RFP) for community-based energy development (C-BED) renewable energy resources.

Great River Energy is subject to the Minnesota Renewable Energy Standard, which requires electric utilities to supply an increasing percentage of their energy sales from renewable energy sources, reaching 25 percent by 2025.

Minnesota state law encourages utilities to evaluate C-BED projects and to report efforts made to acquire C-BED resources.

Great River Energy is currently evaluating proposals based on their impact to wholesale power rates and other factors.

MemberCo-op CORNER

YOUNG CO-OP MEMBERS VISIT WASHINGTON, D.C.

High school students from electric cooperatives across Minnesota were selected to take an insider's tour of our nation's capitol. Attendees were chosen based on their submissions to an essay contest to join more than 1,500 young adults from across the country.

Attendees spent time visiting the memorials and historical places around Washington, D.C., as well as talking with congressional representatives, including Reps. Tim Walz and Chip Cravaak, and Sens. Amy Klobuchar and Al Franken. Chase



The Minnesota delegate to the 2010 Rural Electric Youth Tour visit the U.S. Capitol.

Kroll, legislative assistant to Rep. Michele Bachmann commented that he was extremely impressed with the inquisitive questions asked by the students.

Attendees also learned about energy issues concerning their local cooperative and careers in the electric utility industry.

This opportunity was made possible due to the support of Minnesota's electric cooperatives and the Minnesota Rural Electric Association.

ARROWHEAD PREPS FOR BROADBAND INSTALLATION

A big Arrowhead Electric Cooperative project is making significant progress toward delivering high-speed broadband service to its members.

The fiber-to-the-home network will be capable of delivering high-speed broadband service, VoIP telephony, distance learning, tele-medicine, smart grid energy solutions and other advanced broadband applications to the residents of Cook County.

Due to the relatively rural nature of the area, existing telecommunications providers have not upgraded their networks to provide the critical high speed access. This project will allow Arrowhead to provide services that

will allow its citizens to prosper. Fiber optic cables will follow the existing routes of Arrowhead Electric's distribution lines, both above and below ground.

Crews have already begun work for broadband in the Tofte, Schroeder and Lutsen areas. Crews will be adding cross arms, raising lines and performing general maintenance to obtain proper clearances.

The fiber optic project is funded largely by a nearly \$17 million dollar award (70 percent grant, 30 percent loan) from the Rural Utility Service, a department of the United States Department of Agriculture.

HORMAN NAMED GM AT REDWOOD AND SOUTH CENTRAL

Ron Horman has been named general manager at Redwood Electric Cooperative and South Central Electric Association. Both cooperatives are member-owners of Great River Energy that serve parts of southwest Minnesota.

Horman will replace Tom Malone who also served as general manager of both cooperatives. Horman previously served as operations manager at Redwood Electric Cooperative.

Spreading Rachel's message

Connexus Energy is a sponsor of the Rachel's Challenge program at several high schools in its service area.

Rachel's Challenge is a school presentation that encourages individuals to create a positive cultural change in their schools, businesses and communities by starting a chain reaction of compassion and kindness.

The program is based on the writings of Rachel Scott, the first person killed at shootings at Columbine High School in Littleton, Colo. in 1999.

Connexus Energy's sponsorship will fund presentations at Zimmerman, Becker, Princeton and Cambridge High Schools. Students and parents are invited to attend the events.

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ADDRESS SERVICE REQUESTED

12300 Elm Creek Boulevard
Maple Grove, MN 55369-4718
greatriverenergy.com

If you have any suggestions for future stories contact Dan Becchetti, editor, at 763-445-5706; dbecchetti@greatriverenergy.com; or write:

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