The collaboration of CapX2020 utilities is “ushering in a new era of multi-state transmission planning and development that is re-shaping the electric power industry” according to a study released by the University of Minnesota Humphrey School of Public Affairs.

The study takes an in-depth look at the history of CapX2020 and how several factors contributed to 11 utilities ultimately coming together for a common cause to build the largest transmission expansion in the Upper Midwest in over 40 years.

“Transmission development is a critical, yet notoriously challenging component of decarbonizing the energy system,” said Elizabeth Wilson, professor of energy and environmental policy and law at the Humphrey School and Institute on the Environment fellow. “The coordinated CapX2020 efforts across several states are at the forefront of energy system planning evolution in the United States.”

Researchers interviewed 32 individuals directly involved in the CapX2020 projects, including state and federal regulatory commissioners, utility employees, lawyers and landowners to gather information. They also reviewed over 100 documents ranging from technical studies, government reports and newspaper stories.

“CapX has managed to reinforce the grid in Minnesota in ways that will aide reliability, but I think it will also give roads in Minnesota and to the east access to some of the best high quality renewable resources on the continent. That kind of integration is critical moving forward. Resource diversity gets rid of congestion which gives people access to lower cost generation, it reduces emissions ... ”

– Jim Hoecker, former Federal Energy Regulatory Commission (FERC) chairman

CapX2020 dubbed a winning formula for future transmission planning

*U of M Humphrey School of Public Affairs examines the 800-mile transmission line project*

**Keys to success**

According to the report, there were five key characteristics that led to the success of the CapX2020 coalition including common goals, creating a win-win situation, building relationships, group governance and transparency and open communication. The common goal was a shared vision for change and the reality that working together would lead to success. Teresa Mogensen, senior
vice-president, transmission at Xcel Energy is quoted in the report, “Part of the willingness to collaborate means, ‘I win and I let you win too’. That’s the attitude you need to make it successful, because if the attitude is, ‘I only win if everybody else loses,’ than you’re not going to have a coalition like CapX.”

The CapX2020 partners include varying types of utilities such as cooperatives, municipals and investor-owned (IOU), each bringing something different to the table. Tim Noeldner, vice-president, rates & special projects at WPPI Energy explains “Sometimes you’ll run into customers or intervenors that say, ‘The only reason why you guys want to build this line is so that you can enrich the pockets of your shareholders, when this happens, we can step up and say, ‘we are not-for-profit. We’re after this for our customers just like Xcel Energy is. And it’s pretty hard to accuse us of lining the pockets of our shareholders because we don’t have any!’”

Paying dividends

With nearly 700 miles of the CapX2020 projects complete and energized, partner utilities and their customers are already benefitting.

“By having the CapX line now in-service, we can already see the operational benefits of it,” said Ben Porath, vice-president power delivery for Dairyland Power. “We can take other lines out of service for maintenance now. We can withstand an outage due to a storm better than we could have historically.”

The remaining portions not energized include a 38-mile segment between Pine Island and Hampton, Minn. and 70 miles in South Dakota.

Engage early and often

The study highlights transparency, open communication and early engagement as a major key to success stating, “Instead of operating in isolation, the group made it a point to engage with stakeholders early and often.” Researchers point out the CapX2020 leaders took into account the controversy in the 1970’s when transmission was being built from central North Dakota to the Twin Cities. During that time some vandals tore structures down, and 120 people were arrested.

“People felt very wronged in the process and they were so committed that they were cutting down towers while they were energized,” said Will Kaul, vice president, Great River Energy. “So my promise to myself was never on my watch will we have something like this, and I think all of the other utilities felt the same way.”

“What was most surprising to me was the level of outreach and engagement that this group had with all parties involved,” said Marta Monti, the Humphrey School’s lead research associate for the project. “Public engagement was key and the level at which the utilities engaged with landowners directly impacted by the project was unprecedented. The personal and institutional collaboration necessary to enable a project this size is incredibly impressive.”

Supporting renewable energy

The 800-miles of new high-voltage transmission line will allow for more renewable energy to be added to the power grid.

In the study, Beth Soholt, executive director for Wind on the Wires recalled, “When we started working on transmission for wind energy almost 15 years ago, transmission was truly the glass ceiling for wind development. There was simply not enough transmission capacity to deliver the thousands of megawatts of new wind power that was envisioned for the Midwest.”

There are several interconnection requests currently under review to bring new wind generation onto the CapX2020 transmission lines, including a 200 megawatt wind farm on the Brookings County-Hampton project.

Hampton-Rochester-La Crosse
LAST STRUCTURE SET

A major milestone for the original four CapX2020 transmission line projects was marked on May 5, when the last structure was set on the 156-mile 345/161-kilovolt (kV) Hampton-Rochester-La Crosse project. The four original group 1 CapX2020 projects include the 230 kV Bemidji-Grand Rapids transmission line, energized in 2012, the 345 kV Brookings-County-Hampton and 345 kV Fargo-St. Cloud-Monticello projects, both energized in 2015 and the Hampton-Rochester-La Crosse project. A total of 4,559 steel structures have been set on the four projects, 1,113 of those on Hampton-Rochester-La Crosse.

Crews will now finish stringing and attaching components between Pine Island and Hampton, Minn. The final 38-mile 345-kV segment is scheduled to be energized in September, 2016.

The 90-mile 345-kV segment between Holmen, Wis. and Pine Island, Minn. was energized in September, 2015 and the second 161-kV line west of Rochester was energized in January, 2016.

Project status

What’s the buzz?

Last fall crews planted native pollinator species plants on seven acres of CapX2020 right-of-way at a Boy Scout camp near Town of Holland, Wis. Pollinator-friendly plants which attract bees and butterflies typically take three years to flourish; 1st year it sleeps, 2nd year it creeps and 3rd year it leaps!
Big Stone South-Brookings County
STRUCTURE SETTING TO START IN JUNE

Nearly 50 percent of the foundations are complete on the Big Stone South-Brookings County transmission line project. The 345-kilovolt transmission line will run between the Brookings County Substation, near Brookings, S.D. and the Big Stone South Substation near Big Stone City, S.D.

Structure setting is scheduled to begin in June near Big Stone City and move south. When stringing of conductor begins crews will use implosive connectors at times. The implosive connectors set off an extremely loud blast. Landowners in the vicinity of the blast area will be informed prior to a blast taking place. Helicopters will also be used at times to assist in stringing conductor and attaching components.

The photo above captures an implosive connector blast used to splice and connect conductor.

Helicopters are used at times to assist with stringing conductor and attaching components.

We want to hear from you.
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