

ANNUAL REPORT



July 1, 2009 to June 30, 2010



OVERVIEW

At the request of the North Dakota Industrial Commission (NDIC), the North Dakota Transmission Authority (Authority) was created by the North Dakota Legislative Assembly in 2005.

Since its inception the Authority's mission has been to facilitate the development of transmission infrastructure in North Dakota. The Authority was established to serve as a catalyst for new investment in transmission by facilitating, financing, developing and/or acquiring transmission to accommodate new lignite and wind energy development. The Authority is a builder of last resort, meaning private business would have the first opportunity to invest in and/or build additional needed transmission.

By statute the Authority membership is comprised of the members of the North Dakota Industrial Commission. Sandi Tabor has served as director of the Authority since October 2006. Ms. Tabor works closely with the Executive Director of the NDIC, Ms. Karlene Fine. The Authority has no other staff, and receives no direct general fund appropriation.

SUMMARY OF ACTIVITIES

Whether the issue is project development or legislative initiatives, the Authority is actively engaged in seeking ways to improve North Dakota's energy export capabilities. To be successful Authority staff must have an in-depth understanding of the technical and political challenges associated with moving energy from generator to satisfied customer. Detailed planning is a prerequisite along with outreach to potential developers and existing transmission system owners and operators in order to meet the goals set

by the EmPower ND Commission of increasing North Dakota's installed capacity of wind generation to 5,000 megawatts by 2020. Another key element for success is working with elected officials at the state and federal levels to ensure that legislation and public policy are designed to take advantage of moving electricity generated from North Dakota's abundant energy resources to local, regional and national markets.

North Dakota Industrial Commission



John Hoeven
Governor



Wayne Stenehjem
Attorney General



Doug Goehring
Agriculture Commissioner

North Dakota Transmission Authority



Sandi Tabor
Director

STATUTORY AUTHORITY

Statutory authority for the Authority is found in chapter 17-05 of the North Dakota Century Code. Section 17-05-05 N.D.C.C. delineates the powers of the Authority including:

1. make grants or loans or to borrow money;
2. issue up to \$800 million in revenue bonds;
3. enter into lease-sale contracts;
4. own, lease, rent and dispose of transmission facilities;
5. enter into contracts to construct, maintain and operate transmission facilities;
6. investigate, plan, prioritize and propose transmission corridors; and
7. participate in regional transmission organizations.

Before the Authority may exercise its power to construct transmission facilities, it must follow a process defined by statute to ensure public participation and comment. In particular, the Authority must publish a notice describing the need for the transmission project. Entities interested in constructing the facilities or furnishing services to satisfy the identified needs have 180 days to respond by filing a notice of intent. If the Authority receives a notice of intent from an interested entity, it may not exercise its powers to construct unless the Authority makes a finding that doing so would be in the public interest. In making such a finding, the Authority shall consider the economic impact to the state, economic feasibility, technical performance, reliability, past performance, and the likelihood of successful completion and ongoing operation.

To enhance the Authority's bonding program, the 2009 North Dakota Legislature passed legislation allowing up to 30% of the cost of a project to be financed by selling bonds that include the moral obligation of the State of North Dakota. Under the new law up to \$240 million of the Authority's total \$800 million bonding authority may be sold with the moral obligation of the state. The moral obligation component will enhance the marketability of the Authority's bonds.

WIND FACTS

The estimated construction cost of the infrastructure associated with the wind farms built since 2007 or announced during the last two years will exceed \$12 billion.

North Dakota's transmission system will be increased by over 500 miles with the addition of new 230 kV and 345 kV transmission lines.

KEY ELEMENT: PLANNING

During the last two years transmission planning at the macro level has moved to the forefront and now represents a major portion of the Authority's workload. Through participation in several regional planning efforts and one major national focus, entities representing significant portions of the United States are now discussing how to improve the country's aging transmission infrastructure and how to improve the transmission of low-carbon and zero-carbon energy from rural areas to urban areas. Areas of common ground are being identified as well as areas of local and regional concerns in forums that encourage debate and resolution.

- **REGIONAL GENERATION OUTLET STUDY**

Authority staff participates in meetings of the Regional Generation Outlet Study (RGOS) sponsored by the Midwest Independent System Operator (MISO). The study is evaluating the impact of state specific renewable portfolio standards (RES) on MISO operations, specifically focusing on wind development. Phase I of the RGOS process focused on transmission needs in Minnesota, Iowa, Illinois and Wisconsin, while Phase II is considering renewable portfolio standards in Michigan, Illinois, Missouri, and Ohio. The study will help define potential export markets for North Dakota by identifying potential transmission opportunities to these markets.

In February 2010 the final report for the RGOS Phase I study was released. The report included potential transmission line build-out options connecting energy zones located in North Dakota, South Dakota, Minnesota, Iowa and Wisconsin. The energy zones were identified as part of a review process conducted by the Upper Midwest Transmission Development Initiative (UMTDI -- see below).

The UMTDI energy zones served as a basis from which the RGOS team developed detailed transmission build-out options (345kV and 345/765kV), costs estimates and capacity factor zones. The Phase I report provided

a five-year road map for potential transmission build-out. The study evaluated several options for 15 GW systems within the UMTDI states and for 25 GW systems within the UMTDI states with 10 GW of export to the eastern portion of the MISO footprint.

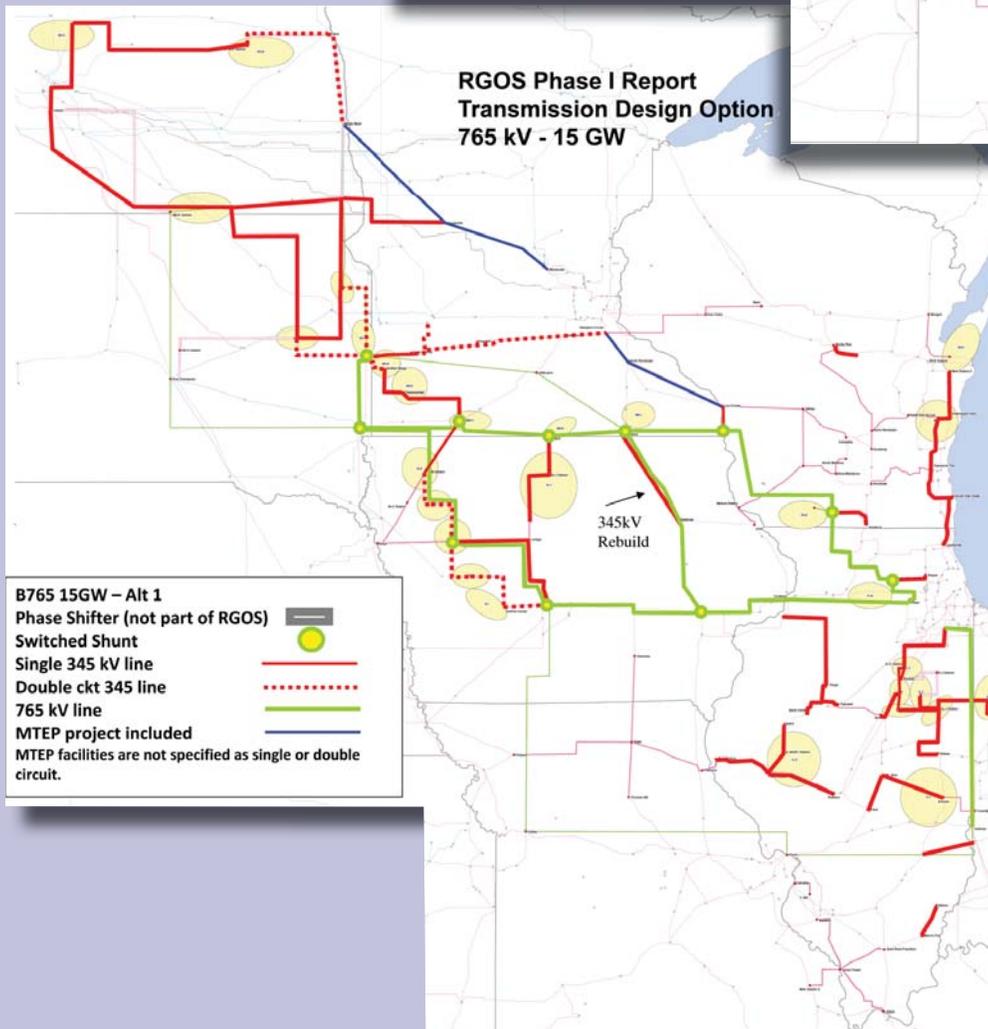
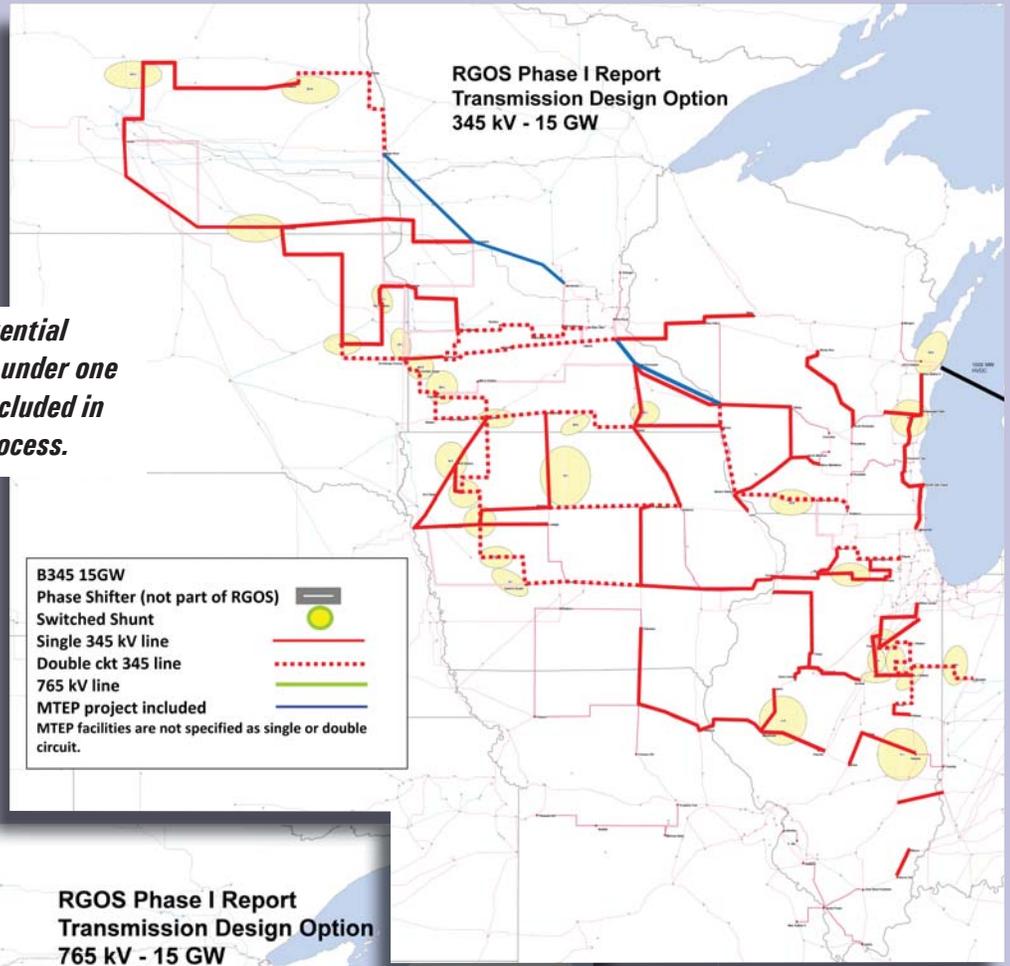
Depending on the option, the total investment for system designs outlined in the report ranges from \$12 to \$22 billion. There are a number of 345kV lines common to all the build-out scenarios. The study estimated the construction of these common lines would cost approximately \$4 billion. The scenarios include a range of 4,329 – 7,043 miles of transmission line and 146 to 151 substations.

The focus of the RGOS Phase II study is to incorporate the Phase I results into the design of a MISO footprint wide system which will increase the transmission capacity to accommodate state renewable portfolio standards. The Phase II study is expected to be complete in October 2010.

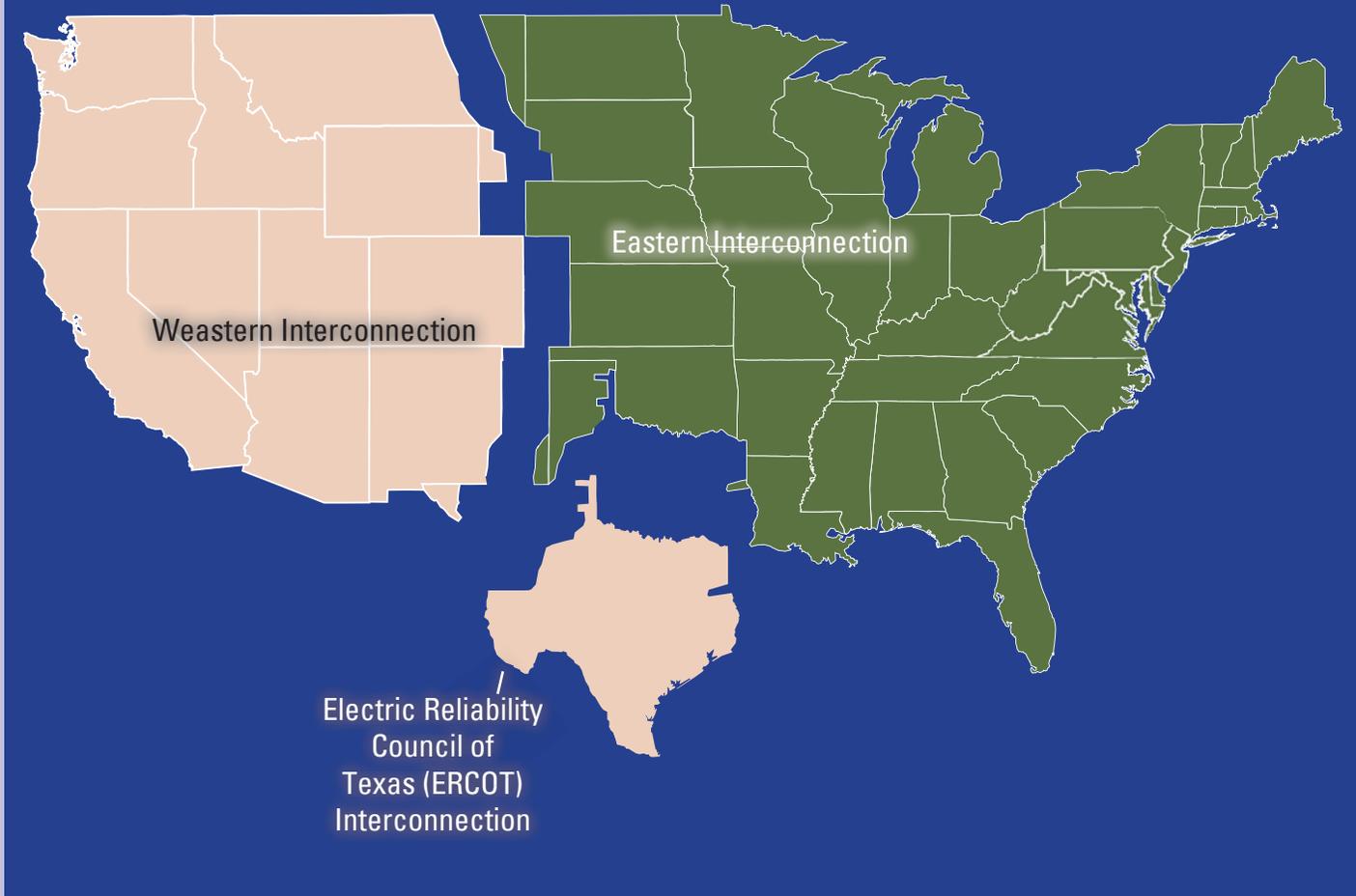
- **UPPER MIDWEST TRANSMISSION DEVELOPMENT INITIATIVE**

Authority staff represent Governor Hoeven's office in a five-state study (ND, SD, MN, IA, and WI) to determine the feasibility of upgrading and/or constructing new transmission in the region. Staff participated in bi-monthly

The maps reflect potential transmission design under one of several options included in the RGOS Phase I process.



National Power Grid



High-voltage electrical transmission lines in the United States are divided into three separate grids that make up what is often called the national power grid. All United States power utilities, except those in the states of Alaska and Hawaii, are connected to other power utilities through the national power grid. Dispatch centers maintain and control the flow of electricity over the grid, supplying electricity to meet the demand.

executive committee conference calls and meetings with North Dakota transmission owners. The UMTDI study has not only identified the location of energy zones within each of the member states, but it is also evaluating ways to streamline the permitting and siting processes in each state and tackling the difficult issue of how to allocate the enormous costs associated with the build-out of transmission.

Who pays for new transmission or upgrades to existing transmission infrastructure (known as “cost allocation”) is a controversial issue, especially for transmission owners serving the rural portions of the MISO footprint. During the last 19 months, MISO and the Organization of MISO States focused a great deal of energy in developing cost allocation methodologies to cover the

costs associated with the transmission build-out being planned through the RGOS process. Many members of UMTDI were actively engaged in these cost allocation discussions. Ultimately, these discussions resulted in MISO filing a tariff with the Federal Energy Regulatory Commission (FERC) including a cost allocation formula that assesses the cost of certain high voltage transmission infrastructure across the MISO footprint. A decision on the filing is expected from FERC before the end of 2010.

- **EASTERN INTERCONNECTION STATES PLANNING COUNCIL**

The American Recovery and Reinvestment Act of 2009 (ARRA) required states to coordinate planning in the Eastern Interconnection and provided the Department of Energy (DOE) with planning grant monies to encourage

² *Electric Transmission America is a transmission joint venture of subsidiaries of American Electric Power and MidAmerican Energy Holdings Company.*

a state-led transmission planning process. The Eastern Interconnection States Planning Council (EISPC) was formed in June 2009 to apply for a DOE planning grant. The focus of EISPC (which includes 39 states and the District of Columbia and the City of New Orleans) is to develop concepts for moving zero-carbon and low-carbon energy throughout the Eastern Interconnection. A grant of \$14 million was awarded to the group in late 2009 to fund a 4-year planning process. The group's organizational meeting was held in March 2010. Due to delays in contract negotiations with DOE, the group will begin its work in earnest in August 2010.

- **SMART TRANSMISSION STUDY**

The Strategic Midwest Area Transmission Study is a comprehensive study of the transmission needed in the Upper Midwest to support renewable energy development and to transport that energy to consumers. The study is sponsored by Electric Transmission America¹, American Transmission Company, Exelon Corporation, NorthWestern Energy, MidAmerican Energy Company and Xcel Energy.

The Authority participated in recent stakeholder meetings regarding the study. Consultants have evaluated extra-high voltage transmission alternatives and provided recommendations for new transmission development in the Upper Midwest, including North Dakota, South Dakota, Iowa, Indiana, Ohio, Illinois, Minnesota and Wisconsin. This process included an analysis of transmission alternatives, and analyzed the economic benefits of several transmission options. Study results will be shared with MISO and other regional transmission operators for consideration in their future respective planning processes.

- **DUE DILIGENCE PROTOCOLS**

Closer to home, the Authority finalized a planning process of a different sort. As mentioned above, in 2009 the North Dakota legislature passed legislation allowing up to 30% of the cost of a transmission project to be financed by selling bonds that include the moral obligation of the State of North Dakota. Under the new law up to \$240 million of the Authority's total \$800 million bonding authority may be sold with the moral obligation of the state.

With the new law came a need to develop a process by which transmission projects could be evaluated for associated risk and potential success. Recognizing the need for expertise in the finance area, the Authority assembled a team representing the North Dakota Industrial Commission, the Bank of North Dakota, North Dakota Public Finance Authority, the Attorney General's Office, the Authority's senior underwriter and bond counsel. The team developed due diligence criteria to use when reviewing projects submitted by transmission developers interested in securing financing through the sale of transmission bonds

Based upon the advice received from the underwriters and NDIC finance counsel, the criteria consists of five key elements – project financing, structure for bond repayment, project feasibility studies, site control and equipment manufacturers. Developers interested in state financing will be asked to address each key element. In turn the information will be evaluated by Authority staff in conjunction with the Due Diligence team to determine whether the project can be financed with state revenue bonds.

KEY ELEMENT: OUTREACH

A significant element of the Authority's mission is to solicit ideas from interested parties regarding solutions to transmission constraint issues in North Dakota. Outreach can occur in many ways, whether through one-on-one contacts with individuals or by participating in organizations and programs designed to bring a wide-variety of people and groups together to share ideas and develop solutions. The Authority's outreach program includes both individual contacts and participation in larger group meetings.

- **GREAT PLAINS APPLIED TECHNOLOGY CENTER**

In late 2008 a group of companies, in conjunction with the City of Bismarck, developed a white paper on the establishment of an applied technology center at the National Energy Center of Excellence located at Bismarck State College. The impetus for the initiative was an interest

In response to the group's efforts, the 2009 North Dakota Legislative Assembly passed language authorizing matching dollars for the construction of a building to house the Center provided a feasibility study concluded that the concept had merit. The City of Bismarck received a \$100,000 grant from the Economic Development Association to conduct a feasibility study. Released in June 2010, the study determined that the concept was feasible, but only if industry and state government were willing to financially support the Center in its early years. The Center's steering committee is considering options for funding the Center.

- **UPPER GREAT PLAINS TRANSMISSION COALITION**

Another group interested in solving transmission issues in the region is the Upper Great Plains Transmission Coalition. The Coalition meets periodically to discuss recent events at the local, state, regional and federal levels. For instance, at the last meeting of the Coalition in June 2010 presentations were made by representatives from the ND Congressional Delegation, CAPX 2020,

in demonstrating technology solutions to address the intermittency of wind energy. In addition to the Authority, several energy companies participated including Minnesota Power, Otter Tail Power, Xcel Energy, Great River Energy, Basin Electric Power Cooperative and Montana Dakota Utilities.

ITC Green Power Express, SMARTransmission Study, MISO, UMTDI, and state representatives. In particular CAPX representatives discussed future transmission development in Minnesota, including concerns about the status of the Brookings line. Staff from Senator Dorgan's office discussed the transmission portions of the Senate Energy bill noting that it was unclear whether the bill would move to the Senate floor. Representatives from MISO discussed the new cost allocation methodology filing and how it will facilitate new transmission build-out.

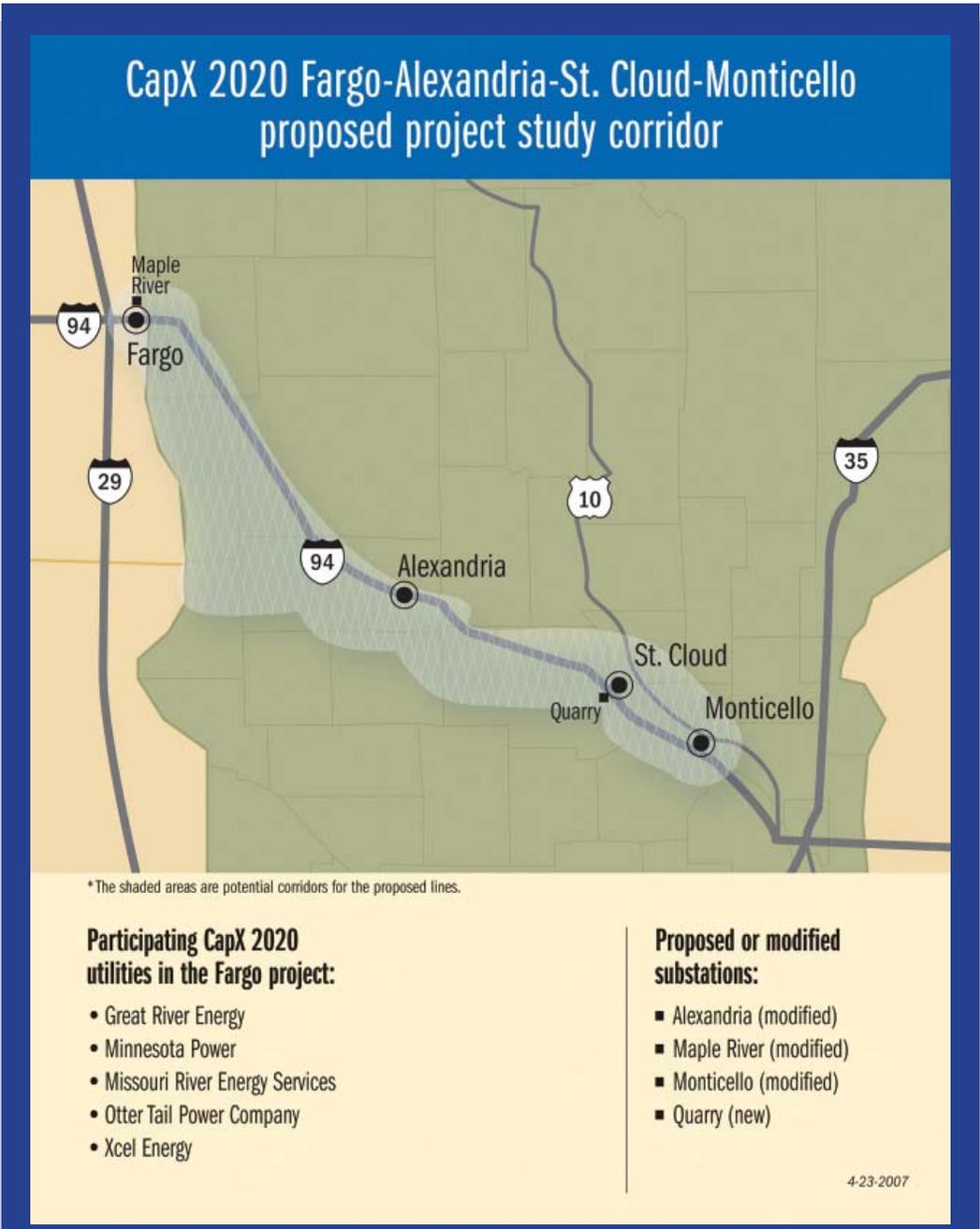
- **CAPX2020**

CapX 2020 is a Minnesota-based joint initiative of 11 transmission-owning utilities to expand the electric transmission grid to ensure continued reliable and affordable service. Planning studies show that Minnesota customer demand for electricity will increase 4,000 to 6,000 megawatts (MW) by 2020. New transmission lines must be built in phases designed to meet this increasing demand as well as to support renewable energy expansion.

The lines identified in the first phase of the effort include:

- Bemidji-Grand Rapids, 68 miles, 230kV
- Fargo-St. Cloud-Monticello, 250 miles, 345kV
- Hampton-Rochester-La Crosse, 150 miles, 345kV
- Brookings County-Hampton, 200 miles, 345kV

Of particular interest to North Dakota is the Fargo-St. Cloud-Monticello line. This line, with its associated infrastructure, could provide needed relief from the export constraint which limits North Dakota's export capacity. In 2009 the Minnesota Public Utilities Commission (PUC) granted a certificate of need for the CAPX project to construct the Fargo – Monticello line. A route permit was issued by the MN PUC for the first segment of the line (Monticello to St. Cloud) in July 2010. Construction of this segment is expected to begin in the fall of 2010.



In April 2009 the Minnesota Public Utilities Commission granted a certificate of need to construct the Fargo – Monticello line. A route permit application for the line is being considered by the MN PUC and similar permitting processes will be pursued for the North Dakota segment of the line.

• **INDEPENDENT TRANSMISSION PROJECTS**

Companies that focus solely on building transmission lines periodically make presentations to the Authority. One proposal of interest is the Green Power Express being proposed by ITC Holding Corporation, a Michigan based company. The Green Power Express proposes to build 3,000 miles of 765kV line across seven states including North Dakota.

Company (ATC), a Wisconsin based company. ATC built or upgraded 1,700 miles of transmission line largely in Wisconsin, northern Michigan, eastern Minnesota and Iowa. The Authority has attended several meetings with ATC representatives to discuss transmission activities in the state and regional planning initiatives.

Another company interested in working with the State to develop large-scale transmission is American Transmission

² Active wind farm development refers to wind farms in operation, under construction or in receipt of a permit to construct.
³ Based on information available from filings made with the ND Public Service Commission.

- **WIND FARM DEVELOPMENT**

Amere two years ago, North Dakota had 529 MW of active wind farm development.² Today, there are 1,800 MW of wind farm energy in various stages of development and an additional 5,329 MW in the planning stages. During the last year the Authority met with representatives from many of the new wind farm developments, including Minnesota Power, NextEra Energy Resources (formerly Florida Power & Light), Just Wind, Denali Energy, Xcel Energy, Minnkota Power Cooperative, and Basin Electric Power Cooperative.

In addition Minnkota Power Cooperative, Inc. proposed the construction of approximately 260 miles of 345kV transmission line from Center to Grand Forks. Projected

to be completed by early 2013, the new line will move energy from the existing Milton R. Young 2 power station directly into the Minnkota service territory. Reallocation of energy presently transmitted on the existing line to this new line will also allow more energy from potential future wind power developments to be carried. The estimated cost of the project is \$310 million.

The estimated construction cost of the infrastructure associated with planned or built wind farm projects since 2007 will exceed \$12 billion dollars.³ To accommodate moving power from the wind farms to the transmission system at least 288 miles of new 230kV transmission line either have been constructed or will be constructed.

KEY ELEMENT: GOVERNMENT ACTION

Providing elected officials with the information necessary to make informed decisions is another function of Authority staff. Whether the issue is setting state energy policy regarding transmission development or commenting on federal transmission legislation, the Authority serves as a resource for decision-makers. In the last year the Authority was busy on several fronts working with the following entities: the EmPower ND Commission, Governor's Office, Department of Commerce, the ND Tax Department, ND Public Service Commission, ND Legislative Assembly and the Congressional Delegation.

- **EMPOWER ND COMMISSION**

The Authority was an active participant in the EmPower ND Commission work. Authority activities included briefing the Commission on transmission issues in North Dakota and participating in the design of Commission goals. The Commission's 2010 report includes the following wind development goal:

- ◇ Develop an export market to increase installed capacity of wind generation to 5,000 MW by 2020 conditioned upon a prior commensurate increase in North Dakota transmission export capacity and cost-effective and

equitable allocation of the associated cost to North Dakota customers that:

- maintains grid stability;
- preserves affordability for North Dakota electric rate payers;
- maintains and expands opportunities for North Dakota lignite coal and natural gas industries, including offering base-load, peaking and other services for large-scale exporting of energy.

The Commission's transmission goal is to increase North Dakota's energy export capacity to 7,500 MW in coordination with other states and regional planning entities to facilitate permitting, construction and upgrading transmission systems by 2020 provided acceptable cost allocation methodology is developed and approved by FERC.

- **NORTH DAKOTA LEGISLATIVE ASSEMBLY**

The Authority presented an update to the Interim Energy and Transmission Development Committee in August 2009.

- **FEDERAL LEGISLATION**

Periodically the Authority discusses the feasibility of including federal tax exemption language on state issued transmission revenue bonds with Senator Conrad's office. To date no bill has received any traction largely due to the costs associated with the program.

National transmission grid legislation was a high priority for Congress in 2009. Bill drafts by Senate Majority Leader Harry Reid, Senator Bingaman and Senator Dorgan, to name just a few, were introduced. The bills focused on transmission planning and to varying degrees called upon state and/or regional transmission planning to be conducted. On the House side of Congress, the Waxman-Markey bill included transmission planning language but not on the same level as the Senate drafts. Authority staff reviewed and provided comments to Senator Dorgan's staff on several drafts of the Senator's national transmission grid bill. Staff also provided comments to Representative Pomeroy's staff on the transmission provisions in the Waxman-Markey bill.

- **INTERAGENCY COORDINATION**

As important as everything else discussed in this report is the coordination of efforts among the various government entities with an interest in transmission development. In particular, regular meetings are held with the representatives

from the Public Service Commission to discuss the status of transmission projects. When business development staff from the Department of Commerce set meetings with new project developers they invite Authority staff to

attend. Likewise, Authority staff provide briefings on transmission issues to Commerce staff and members of the Governor's staff. In addition, Authority staff provide comments and background to the Governor's staff on transmission issues raised at various regional and national meetings, like the Western Governors Association. All of these efforts make the State's response to transmission issues and opportunities more timely and seamless.

EmPower ND Wind Development Goal:

Increase installed capacity of wind generation to 5,000 megawatts by 2020.

CONCLUSION

The expansion of transmission capacity in the State of North Dakota was one of the key reasons for the creation of the Authority in 2005. As many in North Dakota have discovered, there are no easy answers to the perplexing questions of how to quickly expand transmission infrastructure in order to export more energy from our state. The transmission issues are complex

and changes to the system must be made with great care to ensure the reliability of the existing system and to maintain the ability of the system to provide electricity to its customers 24 hours a day, 7 days a week. The good news is that new transmission is being built and will continue to be built as the demand for new generation grows not only in the region, but also in the nation. The North Dakota Transmission Authority will continue to work to ensure new development.

