WIND ENERGY & TRANSMISSION: THE SOUTH DAKOTA LANDSCAPE

November 29 - 30, 2007
Sioux Falls, SD

MEETING SUMMARY

Over 300 people from South Dakota and the region, including wind and transmission developers, regulators and siting authorities, state and federal agencies, utilities, tribes, and many other sectors participated in the meeting *Wind Energy & Transmission: The South Dakota Landscape*. The meeting focused on South Dakota's remarkable wind power potential, transmission constraints impeding development of the wind resource, and opportunities for overcoming transmission challenges.

Meeting presentations are online at http://www.nationalwind.org/calendar/wind_Energy_transmissionsouth_dakota_landscape.htm. A brief summary of each session appears below. The summit agenda and final participant list appear in the Appendix.

Opening Remarks

Dennis Daugaard, South Dakota's Lieutenant Governor, welcomed the attendees gathered to talk about maximizing use of the state's wind resources. He noted that places like Germany and Denmark developed large amounts of wind power because leaders in those countries made decisions that supported wind energy. The public in South Dakota and across the country are starting to embrace wind power for its environmental attributes and economic benefits. Wind power economically benefits South Dakotans by providing lease payments to landowners, adding to local tax bases, and creating new construction, operation, and manufacturing jobs. South Dakota in particular has one of the top wind resources in the U.S. but ranks 22nd in terms of actual wind development.

To build more wind turbines, South Dakota reduced property taxes for wind projects and created the South Dakota Energy Infrastructure Authority to help increase transmission accessibility. Nearly 4,000 MW of wind energy is in development in South Dakota and Lt. Governor Daugaard said transmission lines are needed to make proposed projects a reality. However, South Dakota's population is 46th in the nation, so most of the additional generation that wind could provide is not needed in-state. South Dakota wind needs access to other markets through transmission but is challenged to build it without overburdening its citizens. Lt. Governor Daugaard encouraged participants to think of these challenges as opportunities in different clothing and to engage in efforts to maximize the opportunities.

Welcome

Facilitators **Abby Arnold and Katie Kalinowski, RESOLVE**, reviewed the meeting objectives and schedule. To orient the meeting towards thinking about how to implement transmission solutions and enhance leadership involvement in such efforts, participants were provided with a handout with potential next steps to achieve these goals. The handout also included next step ideas from the Midwestern Governors Association's *Energy Security and Climate Stewardship Platform for the Midwest 2007*. A copy of this handout appears in the Appendix. Meeting participants were asked to record their reactions to the next steps on the outline and suggest additional activities. At the meeting's conclusion, the final session provided another opportunity for attendees to talk about how to improve transmission accessibility for South Dakota wind power.

Charlie Smith, Executive Director of the Utility Wind Integration Group (UWIG), described transmission and operational needs that support wind power development. A Minnesota Department of

Commerce study showed wind integration costs ranging from $2.00 to $4.50 per megawatt-hour of wind energy generated, depending on the wind penetration level. Wind integration can also require additional reserves. However, there are measures that decrease the effects of wind's variability and can minimize integration costs and reserve requirements such as larger balancing areas, advances in turbine technology, wind forecasting, and participation in markets.

Wind is an energy resource, not a capacity resource; it displaces energy, but system planners must ensure there is enough capacity to meet load. The capacity value of wind plants ranged from 5% to 40% across various studies cited by Mr. Smith.

Due to a lack of robust transmission investment, the transmission grid has insufficient capacity, suffers from congestion, and there are reliability and operational flexibility concerns. To achieve high wind penetration levels, billions of dollars must be invested to build thousands of miles of transmission lines. Innovative approaches are being broached, such as identifying zones with good renewable energy resources and building transmission to such zones to bring those resources online. Mr. Smith closed by listing recommendations for system planning and operation, transmission planning, and market operations that foster wind energy integration; see his slides for a complete list.

20% Wind Energy: South Dakota's Role

In this session, the national vision for meeting 20% of U.S. energy demand with wind power was laid out. Then speakers discussed what such a goal implies regionally and at the state level in South Dakota.

Steve Lindenberg, Acting Program Manager for the U.S. Department of Energy's Wind and Hydropower Technologies Program, described how the DOE, the American Wind Energy Association (AWEA), and the National Renewable Energy Laboratory (NREL) joined forces to study what 20% wind energy in the U.S. would look like. Based on demand projections, 20% represents 300 GW by 2030 and the study found that this level is achievable with the right mix of policies and technology.

Mr. Lindenberg enumerated wind energy advantages, such as water savings, minimal life-cycle greenhouse gas emissions, and lack of fuel cost. Wind facilities also create jobs and serve as a domestic energy source. Most states have some wind resources, but often the best wind resources are located far from load centers and will need transmission to access markets. 20% wind energy is possible, according to this recent study, but requires America's leaders to support measures aimed at such a goal.

Dave Corbus is a Senior Engineer with the National Renewable Energy Laboratory (NREL), which is embarking on a new project, the Eastern Wind Integration and Transmission Study (EWITS). The study investigates what power system impacts may arise with wind penetration levels of 20% and 30% by 2024 in the Joint Coordinated System Plan (JCSP) region (Midwest ISO, PJM, Southwest Power Pool, and TVA). Wind's variability and transmission access will factor into studying the operating and reliability impacts. The three key tasks that EWITS will accomplish are:

1. Identifying wind power generation sites for 20% and 30% wind energy scenarios
2. Developing a transmission plan, in coordination with the JCSP
3. Evaluating operating impacts such as regulation, load following, unit commitment, etc.

EWITS kicked off in November 2007 and is slated for completion by June 2009. Mr. Corbus encouraged attendees to provide input to the study process and provided contact information to do so.

Dale Osborn, the Midwest ISO's Transmission Technical Director, focused on how regional transmission organizations (RTOs) like MISO do transmission planning and the role of markets. He emphasized the importance of studies to build a business case for transmission. MISO has two study processes: the Joint Coordinated System Plan (JCSP) and the MISO Transmission Expansion Plan (MTEP).

Each RTO has transmission charges and moving power from one RTO to another (crossing a seam) incurs additional transmission charges referred to as pancaking. Larger markets help reduce incurrence of these additional transmission charges, which has significance for moving wind power greater distances between generation and load. MISO and PJM eliminated rate pancaking between their jurisdictions.

There are three types of markets—energy, ancillary services, and capacity. In the energy market, generators are paid the clearing price (price that must be paid to obtain enough power to cover peak demand for a 5 minute or day ahead period) minus congestion and losses. Ancillary services are the transmission and generation services needed to get electricity from resources to load while maintaining reliable operations. If ancillary services are not properly provided, they must be purchased from someone else. Capacity markets are a requirement on Load Serving Entities (LSEs) to ensure there is enough capacity to meet their customers' demand. If there is a shortfall, the LSE must purchase capacity from the market. PJM has a capacity market but MISO does not, using reserves instead.

Electricity prices in the U.S. Northeast are high relative to the Midwest. Additional transmission could help wind energy access Eastern load, lowering electricity rates there and benefiting generators through the energy market. South Dakota cannot build this transmission on its own because it has relatively low energy demand; however, Mr. Osborn suggested that the higher capacity factors in the Dakotas (45% versus 30% on the East Coast) will pay for the transmission.

Mr. Osborn said it appears that it may be possible to build a 15,000 MW multi-line HVDC transmission expansion from the Dakotas-Minnesota area to the east coast to deliver surplus energy due to the addition of substantial wind resources associated with current wind energy mandates (primarily Minnesota) and to sell wind capacity and energy to east coast states to satisfy the eastern states existing RPS mandates. Substantial wind power development is needed to support such a transmission expansion; smaller megawatt values do not work physically or financially. Such a system could allow the development of wind capacity in the Dakota-Minnesota area beyond local mandates. MISO does not make power sales arrangements but does supply value opportunities for transmission.

Terry Grove is co-leader of an endeavor called CapX 2020, a joint transmission effort among 11 utilities that own transmission lines in Minnesota and the surrounding region. The CapX utilities are now in the permitting phase for four major transmission projects that will enhance reliability and provide outlet for renewable generation. CapX 2020 and MISO are doing several studies to identify additional transmission upgrades needed to meet regional needs and state renewable energy standards (RES). Mr. Grove provided details on the Minnesota RES study which looked at the transmission needs to reach the Minnesota RES goal of 25% renewables by 2025. Their report issued on November 1, 2007 includes a comprehensive conceptual transmission plan, as well as identifying specific transmission line proposals and a five year action plan. To meet the Minnesota RES, additional significant transmission upgrades are needed by 2016. It typically takes around eight years from a planning conceptual study to energization of an EHV transmission line. The CapX 2020 group is pursuing bringing projects on-line faster by streamlining and better integrating planning, permitting, engineering, procurement and construction activities. Initial findings suggest that Minnesota RES 2016 requirement can be achieved if studies are completed quickly and permitting activities begin soon and the CapX utilities are committed to doing this.

Bob Gough, Secretary of the Intertribal Council On Utility Policy, spoke about how transmission influences tribal wind projects. When the transmission grid was initially developed, Tribes were not consulted about lines crossing their lands. In the 1990s, they became active in seeking to bring hydropower benefits from the dams over the Western Area Power Administration transmission system to the reservations. In this decade, Tribes are involved in transmission siting processes and the next generation of energy build-out, seeking to use the federal transmission system to carry tribal wind power

from their reservations to a broader regional and national market. Tribal leaders are encouraged that Western Area Power Administration's current Administrator, Tim Meeks, has singled out transmission, wind power, and Native Americans as priorities. It is estimated that at least 3000 MWs of tribal wind from the Northern Great Plains alone could provide 1% of a 20% national wind energy goal. Mr. Gough noted that the Dakota's transmission system serves a great deal of hydropower and suggested there is tremendous opportunity to run wind and hydropower together. As droughts reduce hydropower output, there is additional capacity for tribal wind power as supplemental power for federal power customers.

Questions and Answers

Based on participant questions, speakers made the following comments:

- Minnesota will suggest transmission plans to policymakers that include South Dakota. It will be up to those policymakers to decide if the plans make sense and warrant their endorsement.
- Congestion is when transmission meets its limit. The limit cannot be exceeded; rather, electricity must be redispatched. Redispatch is determined by a complicated algorithm.
- Greater agreement between states on generation and transmission planning is the key to speeding up transmission development.
- Wind power uses less water than many other forms of generation and water savings can be redirected towards other uses.
- The production tax credit (PTC) is not designed to apply to tribes. They would like to see a sharable PTC (HR 1954 & S 2520) where Tribes partner with outside private capital to develop wind projects.

Hunter Roberts is Assistant Energy Director of South Dakota's Energy Infrastructure Authority, an organization formed to help the state become a net energy exporter by 2010. The Authority was created in 2005 to expand energy production and transmission facilities for in-state and export use. To accomplish this work, the Authority has $1 billion in bonding authority. The Authority also helps provide information through annual reports and technical assistance. The climate within which the Authority operates is generally positive, with a good business and political support. The 2007 state wind power report identified the biggest challenges as being a small market with small load growth, the need for new transmission to export energy, MISO queue issues, MISO-Western/Basin seams issue, and the need for the federal PTC. South Dakota is engaged in addressing these challenges and is looking for opportunities to participate in multi-state transmission projects to build its export market.

Tom Feiler, Regional Development Manager with Clipper Windpower, provided a wind developer's perspective on wind power's potential and how to ensure transmission is available to support wind project development. Mr. Feiler singled out renewable energy standards as a major wind power driver and he showed that if 10 Midwestern states all pursued a 25% by 2025 RES, that would be 60,000 MW of wind power. More policy certainty, particularly with the PTC, was also described as a key wind power driver. Inefficiencies in the interconnection process likewise slows wind power development. Interconnection approval takes a long time due to speculative projects in the queue and expensive, complex, and time consuming studies. Overall the uncertainties associated with project development mean wind turbine components are manufactured at a smaller scale and can lead to shortages. To ease transmission hurdles, Mr. Feiler recommended reform of the Large Generation Interconnection Agreement (LGIA) process, resolution of seams issues, and transmission corridor development.

Questions and Answers

Mr. Roberts and Mr. Feiler provided the following statements in response to participant queries:

- Queue problems stem from two problems: 1) the structure as it exists allows developers to come in with multiple requests at multiple times to gain a competitive advantage and it gums up the system, and 2) the process serves two masters, transmission service and interconnection; the two need to be separated.

Transmission Challenges and Opportunities

Speakers in this session addressed what they perceive as the short, mid, and long-term needs to increase transmission access for wind energy. They also talked about who needs to be engaged to help implement those activities.

Randall Oye is an analyst for Xcel Energy's Transmission Access department and he reviewed wind power growth opportunities in South Dakota and how transmission factors in. One driver will be the Minnesota RES, which will utilize wind resources in Minnesota, South Dakota, and other neighboring states. Mr. Oye believes that the location of the wind development will be driven by market conditions, i.e. what is the best location for Minnesota ratepayers. Another topic discussed was how to manage wind generation when the local load cannot support it. Options include curtailing generation (either wind or other types), storing energy (which Xcel Energy is testing), developing intermittent loads, or selling the energy East into the MISO market. Mr. Oye believes that additional studies are needed to identify new transmission needed to sell the energy to the East. Mr. Oye also suggested that "wind campuses" be considered, where wind facilities are located near existing combustion turbines or hydropower to exploit under-utilized transmission capacity. Non-transmission opportunities highlighted by Mr. Oye included renewal of the production tax credit and FERC generation interconnection process reform. From Xcel Energy's perspective, the Minnesota RES offers significant opportunities for wind development in this region – including South Dakota.

Clair Moeller is Vice President of Transmission Access Management for the Midwest ISO and he discussed how MISO is pursuing improvements to the interconnection queue. Mr. Moeller noted that the queue's first in-first out approach is mandated by FERC, although FERC is revisiting this approach at a December 2007 meeting. MISO has taken steps to improve the queue, but it still would take until 2050 to process all requests under the current system. Queue characteristics have changed since the process was designed for natural gas plants relatively close to loads requiring minimum transmission. The total Queue in 2003 was 89% gas; today it is largely wind and coal. Large generation projects, such as mine mouth coal, require complicated and time consuming studies as they affect a much larger area than the projected gas plants used in the Queue process design. However, the time to construct a coal plant and transmission are both about seven to ten years. Wind projects can be constructed in less than a year. Production tax credits for wind development only run for two to three years. The timing expectations, shear volume of the wind requests, and lag time of being able to build transmission create "Queue constipation."

MISO currently has over 70,000 MW in its queue, of which about 55,000 MW is wind. The present total wind mandates for MISO is 12,600 MW by 2025. Reform options under consideration include parallel processing, where projects that do not influence one another are studied simultaneously, and group studies, where requests close in geographic location and timing are studied together. A third option would be an open season approach where the transmission is build before the Power Purchase Agreements are final. Mr. Moeller encouraged picking an approach and working towards its implementation. He added that precedent to achieving increased transmission build, three items are needed: 1) a regional tariff that matches who benefits with who pays over time; 2) cost recovery mechanisms that reduce financial risk; and 3) a consensus around regional energy policy.

Ed Weber is a Transmission System Planning Manager with Western Area Power Administration (Western), a federal power marketing administration. Western operates over 17,000 miles of high voltage transmission and can build or upgrade transmission if certain criteria outlined in EPAct 2005, Section 1222 are met. Western's major transmission challenges are timing, congestion, and cost allocation. Timing refers to the amount of time new transmission construction takes in comparison to the relatively quick development of resources like wind power. Congestion arises in the form of not enough capacity in transmission lines or irregular power flow that harms the system. More wires are needed to increase

transmission capacity. The final challenge, cost allocation, arises from the difficulty in determining the beneficiaries of transmission facilities and therefore should pay for them. Mr. Weber suggested that the easy solutions have already been utilized, so now Western is trying to expand the transmission system to benefit the region without overwhelmingly burdening existing customers. Western plans to continue playing a key leadership role in planning, studies, and design while partnering with others.

Craig Poorker, Senior Field Representative with Great River Energy and Routing Lead on the Brookings Line, spoke about the role of education and public involvement for successful transmission expansion. With the CapX 2020 project, public outreach and communication was done through public meetings, letters and phone calls to landowners, letters to government officials, and open house meetings. At the open houses, fact sheets, maps, videos, and comment forms were provided. Additional open houses are planned, as well as progress reports and construction progress meetings. Working groups are also being formed to discuss routing and the routing process; CapX 2020 leaders would like to get landowners, environmental groups, county planners, and others involved in the project development. Mr. Poorker said establishing relationships is critical, as is answering questions and receiving input. People can request information and submit comments through the CapX 2020 website, www.CapX2020.com. Mr. Poorker suggested the project's success will be measured by the quality of interactions with the public and regulators, the extent of the environmental compliance and stewardship, and by the judgment of generations to come.

Questions and Answers

The following clarifications were made in response to audience questions:

- Wind turbines can and will be shut down if needed, but curtailment is expensive and it would be better to access eastern markets instead.
- The ability to put a project in the queue multiple times is part of the queue challenge right now. One solution may be to let people without PPAs enter the queue but let those with PPAs advance past those without them.
- Transmission build-out is expected to accommodate legislatively mandated renewable energy.

Leaders' Perspectives

In this session, leaders from various sectors talked about what they see as the priority activities to more efficiently use the transmission grid and get more transmission built. They also talked about what they and their organizations are doing to achieve transmission goals.

Load Serving Entities' Perspective

Mike McDowell, General Manager with Heartland Consumers Power District, kicked off the load serving entities (LSEs) remarks on wind energy and transmission. Heartland is headquartered in Madison, South Dakota, serving customers in South Dakota, Minnesota, and Iowa. Central South Dakota in particular has good wind opportunities and Heartland is developing a 50 MW projects at Wessington Springs. Heartland is also investing in the Big Stone II transmission project to help transport wind energy from Wessington Springs to load centers in Minnesota. This project, according to Mr. McDowell, is an integral part of the regional transmission expansion plan. Some additional initiatives that he outlined to help meet renewable energy goals included:

- Encouraging the development of regional postage stamp transmission rates
- Supporting Federal processes for streamlining the transmission line permitting process
- Participating in the development of additional transmission projects within South Dakota and the MISO footprint
- Supporting extensions of the PTC, Renewable Energy Production Incentive (REPI), and Clean Renewable Energy Bonds (CREBs) for some period of time.

Mike Hanson is President and CEO of NorthWestern Energy, a combined electric and natural gas utility serving customers in South Dakota, Montana, and Nebraska. NorthWestern shares ownership of three baseload coal-fired power plants and operates natural gas plants. Wind power is part of Northwestern's Montana portfolio. In South Dakota, NorthWestern recently issued an RFP seeking 20 – 50 MW of wind power. Mr. Hanson suggested that renewable energy mandates are not an appropriate driver for wind power expansion at the state or national level; rather, he encouraged renewable energy objectives which provide flexibility to determine the best generation alternatives in response to supply needs and financial considerations.

Jim Wilcox, Government and Community Relations Manager with Xcel Energy, said level the playing field is key to ensuring wind power moves ahead in South Dakota. Prospective initiatives to level the playing field outlined by Mr. Wilcox include:

- Interim cost recovery – without this, South Dakota is at a disadvantage to its neighbors. Without this tool, utilities have to wait for periodic rate cases to recover costs.
- Renewable Energy Objectives
- MISO Regional Expansion Criteria and Benefits (RECB) – this approach helps spread transmission line costs across the region.
- Condemnation Authority – North Dakota has this but South Dakota does not. This is a controversial means to minimize the time needed to build transmission lines.
- Property tax incentives – apply to transmission lines that move wind power.
- Better coordination with highway authorities – make sure siting policies used by highway authorities do not hinder transmission development.

<u>Questions and Answers</u>
Speakers made the following comments in response to participant questions:

- Those exploring development of an oil refinery in South Dakota have indicated that they will need to connect and upgrade transmission. Indirectly, that should develop some transmission capacity for wind.
- Wind has a place in a resource mix, providing a hedge against the uncertainties of fossil production, including fuel costs and potential carbon regulation. Steel and copper cost increases are affecting all energy supply technologies, but wind does not have fuel cost uncertainty.
- A carbon tax does not address the problem—you have to go to the source of emissions and encourage demand side management and new technologies for sequestration.

Control Area Operators' Perspective – Within MISO
Mike McMullen, the Midwest ISO's Director of West Regional Operations, spoke about the effects of seams between balancing areas, the new term for control areas. In June 2008, MISO will become a NERC-certified Balancing Area, the second largest in the U.S. MISO is working with non-market participants in its reliability footprint (which includes part of South Dakota) to include them under different options.

The seam between Market and Non-Market participants influence congestion management and generation interconnection queues inside and outside MISO. Wind that is interconnected outside the market can be pseudo-tied into a balancing area inside the market and made to look like an internal market generator. Bringing wind into a larger geographical area spreads out its operational effects to a larger group; regulating reserve and load following will increase, but they can be spread to a larger number of generators in a larger control area. Congestion, which Mr. McMullen singled out as the biggest challenge, is also managed better with a larger number of generators with the ability to use price signals and redispatch to relieve it.

Ward Uggerud, Otter Tail Power Company's Chief Operating Officer for Energy Supply, described energy policy as a multi-faceted issue which seeks to fulfill several objectives:

- Promoting energy independence
- Enhancing renewable energy development
- Promoting economic development
- Addressing global climate change
- Providing for increased levels of environmental protection
- Providing electricity as reliably and economically as possible.

No one of these objectives can be met without considering how the other targets will be influenced.

Mr. Uggerud singled out lack of transmission and the need to have a buyer as two main obstacles to enhancing wind power development. OTPC plans to build additional transmission in order to facilitate additional wind resources. However, he also pointed out that energy needs cannot be met without continuing to develop traditional resources. Expansion of renewable and traditional energy resources contribute to economic development. Mr. Uggerud encouraged a diverse portfolio to continue meeting national energy demand and maintain reliability.

Will Kaul, Great River Energy's Vice President of Transmission and Chairman of CapX 2020, spoke about how CapX 2020 is expanding transmission capacity. The CapX 2020 alliance, comprised of 11 electric cooperatives, municipal and investor-owned utilities, formed in Spring 2004 to address potential reliability problems with the transmission grid. The Group 1 projects being pursued by CapX 202 includes nearly 700 miles of transmission lines at a cost of $1.4 to $1.7 billion. The projects were planned to work together to provide reliable service and support RPS requirements. CapX 2020 Group 1 projects, plus those in the planning pipeline are adequate to meet the Minnesota RES 2016 milestone. After 2016, 765 kV lines may be required.

To achieve its aims, CapX 2020 must overcome several challenges. Cost allocation is difficult to solve, although RECB helped break the logjam on Group 1 projects. More difficult cost allocation questions remain for transmission projects driven by wind developments. Lack of a regional energy strategy is also a hurdle—renewable energy goals and transmission additions vary by state, there are several political jurisdictions, and states have competing interests. Mr. Kaul said that state-federal public policy alignment is needed to get future CapX 2020 projects done, but the participating utilities believe Group 1 projects can be completed as planned.

<u>Questions and Answers</u>

Speakers provided the following responses to questions:

- Utilities are collecting wind data from control operators to improve power predictions.
- CapX 2020 coalition members are invested in the transmission projects
- Wind forecasting helps operation over different horizons so there are not generation shortages or overcommitments.
- One speaker said dedicated transmission for wind would mean incorporating it into the grid without problems but otherwise there will be issues to deal with. Another speaker suggested the MISO market allows lots of wind and assuming the CapX 2020 transmission is developed, it will not be a problem.
- A stumbling block with wind forecasting is getting information on factors such as curtailment in real time; otherwise, its more difficult for forecasters to make accurate forecasts.

Control Area Operators' Perspective – MISO Seams

Bob Riehl, Power Marketing Manager with Western Area Power Administration, spoke about Western's presence in South Dakota and how it intersects with MISO. Western traditionally has focused on

hydropower, with 2,000 MW spread over 7 states and 300 customers. Firm contracts require Western to provide 9,000 GWH/year, but drought conditions in recent years mean Western has had to buy power to meet its obligations. If there is excess hydropower, Western operates across the MAPP/MISO seam, selling surplus generation on the market. However, MISO gave notice that it is terminating the existing Seams Operating Agreement with MAPP effective January 31, 2008 and MISO offered three new options for seams management:

1. Renegotiate Seams Operating Agreement with re-dispatch to mitigate congestion
2. Move generation and loads into the MISO LMP Market while continuing to provide transmission service under Western's Open Access Transmission Tariff (OATT)
3. Move generation, loads, and transmission into the MISO LMP Market without signing the Transmission Owners Agreement.

Mr. Riehl said these options are still under consideration but he expected a new MAPP/MISO Seams Operating Agreement to be developed.

Raymond Wahle, Director of Power Supply and Operations at Missouri River Energy Services (MRES), focused on transmission barriers to wind power development that MRES has encountered and solutions to them. MRES has 60 member municipal electric utilities serving 250,000 customers. In 2008, 8% of MRES energy will come from wind, with 90% of that wind energy coming from Community Based Energy Development (C-BED) projects. MRES does not have any wind projects in South Dakota. Mr. Wahle highlighted the following barriers and potential solutions:

Barriers	**Solutions**
▪ Inadequate transmission infrastructure	▪ Build more transmission with state PUC support
▪ Pancaked transmission rates	▪ South Dakota utilities join MISO under Option 3 or become a MISO Transmission Owner ▪ MISO changes its transmission tariff from license plate to postage stamp
▪ Lack of ancillary services	▪ MISO creates an ancillary service market ▪ South Dakota utilities join MISO under Option 2 or 3 or become a MISO Transmission Owner ▪ State PUCs support additional traditional generation
▪ No energy market in South Dakota	▪ South Dakota utilities join MISO under Option 2 or 3 or become a MISO Transmission Owner

Naomi Czachura, Vice President of Rates and Regulatory Strategy for MidAmerican Energy Company, described what MidAmerican looks for to guide its adoption of wind energy. Using Iowa as an example, Ms. Czachura noted the following factors that encourage wind development:

- Utilities allowed to own and operate wind
- Utilities challenged to meet targets
- Ratemaking principles related to wind established in advance of investment, giving some certainty about cost recovery.

Transmission availability and siting considerations will be guiding factors for MidAmerican's future wind power development. For more wind power in South Dakota, Ms. Czachura outlined the following needs:

- Enable transmission siting through regional cooperation or national interest corridor designation for Dakota wind resources
- Assurance of cost recovery for transmission assets
- Ability to finance wind resource development, with utility build option or long-term purchase contracts with developers.

Jeff Nelson is a General Manager with East River Electric Power Cooperative, part of the Basin Electric Power Cooperative regional system. East River service territory has low population density, averaging 2.5 customers/mile of distribution line or less, so Mr. Nelson suggested that regional cooperation is critical to using and maintaining distribution and transmission resources. The cooperatives have been a leader in renewable energy development, with all wind energy used for the benefit of their own customers as part of the not-for-profit business model.

Cooperatives as nonprofits do depend on third parties to develop wind facilities, hindering local investment and, according to Mr. Nelson, frustrating some landowners who want a stake as they have experienced with ethanol development. He suggested that dissatisfaction with wind development could trickle down and become opposition to transmission development. Nevertheless, East River expects another 300 MW of wind to be developed for its use and for other cooperatives which are part of the Basin Electric system in the near future. Mr. Nelson echoed the sentiments of previous speakers in supporting a renewable energy objective and consideration of averaging pricing by MISO so nonprofits are not disadvantaged by cost allocation.

Questions and Answers

Speakers provided the following comments in response to attendee questions:

- The MISO seam is approximately at I-29. When companies cross the seam, they pay a tariff.
- One speaker said average or postage stamp pricing is a way to overcome rate pancaking but Eastern entities generally oppose average pricing. Another speaker responded by saying that average pricing is not a simple answer.
- Joining MISO would make it easier to sell power but not necessarily help with cost recovery. Transmission becomes more of an issue when a utility is outside MISO because they are not getting the automatic redispatch MISO members do and could be cut off.
- Load should pay for transmission costs, but not everyone agrees on this. Typically financial agreements allow for cost recovery over 30 years.
- The South Dakota PUC is encouraging energy conservation as well as transmission through its new website, www.SDEnergySmart.com.

Regulators' Perspective

In this panel, state utility commissioners from South Dakota, North Dakota, Minnesota, and Wisconsin engaged in a dialogue about how their state transmission siting approaches match up and how they are pursuing regional collaboration. Transmission financing and cost recovery were also addressed. Participating regulators included:

Dusty Johnson, Chairman, South Dakota Public Utilities Commission (moderator)
Gary Hanson, Commissioner, South Dakota Public Utilities Commission
Susan Wefald, Commissioner, North Dakota Public Utilities Commission
Phyllis Reha, Commissioner, Minnesota Public Utilities Commission
Mark Meyer, Commissioner, Wisconsin Public Service Commission.

The commissioners made the disclaimer that their remarks reflect their own views and not those of other state commissioners.

Commissioner Hanson took the lead in discussing how different state siting approaches match up. One difference among states is whether they can evaluate need; South Dakota cannot. Whether regional needs can be considered is another difference. Virtually all states encounter landowner resistance. All states have siting laws that apply to transmission lines and most require siting evaluation before eminent domain can be granted. Only one state, Ohio, has pure one-stop shopping.

Commissioner Wefald suggested that because state laws reflect the interests of individual states, a one-size-fits-all approach will likely not work. Commissioner Reha noted that Minnesota requires a certificate of need and a route permit. Transmission developers must also show a project is needed to enhance the public interest and takes into account economics and the environment. Minnesota transmission developers have increased public outreach after "transmission wars" of the 1970s.

The commissioners shared their impressions about whether federal preemption is needed to move transmission forward. Commissioner Hanson suggested that projects are already being slowed by differing state approaches and that guidance from the federal government would help build interstate systems, although the states would want to retain some say in where lines go. Commissioner Wefald mentioned the federal government's backstop siting authority for transmission siting in National Interest Electric Transmission Corridors, saying states knowing that authority exists should try to avoid its application.

Commissioner Wefald responded first to a question about what is needed to promote cooperation across state lines. She highlighted the Organization of MISO States (OMS) as a place where states come together to discuss planning, siting, and other issues. There is an OMS subgroup, the Northwest Siting Subgroup, that North Dakota, South Dakota, Minnesota, Iowa, and Wisconsin belong where they discuss how their siting processes match up. The subgroup found that their processes differ significantly and that they had little ability to change them. Therefore, the states decided to develop collaborative approaches on a project-by-project basis. The utility commissions in North Dakota and Minnesota are working together now on an application from Xcel energy for a 345 kV line between Fargo, ND and Minnesota. The goal is to have joint approval of the border crossing.

Commissioner Meyer noted that state cooperation is complicated by the fact that the MISO footprint has regulated and unregulated states. Unregulated states may want FERC assistance, but regulated states like Wisconsin do not want to cede decision making to FERC. He encouraged thinking outside the box about collaboration models, such as the Great Lakes Water Resources Compact or the Midwesten Governors Association greenhouse gas reduction accord. Commissioner Reha noted that regional coordination efforts can also lead to unnecessary overlap. Nevertheless, she encouraged state legislation promoting regional cooperation. Commissioner Hanson supported formation of a strong regional authority with regional power.

When asked about how effective they thought their state transmission siting processes were, the panelists ranked them as relatively strong. Positive attributes named included limited or no use of eminent domain and timely processes. Others said public processes help get buy-in but slow the process and the presence of transmission constraints suggest that processes can be improved.

Commission Reha led off discussion of how states are addressing transmission financing. She suggested that transmission barriers in her state are not due to capital shortages but rather uncertainty about where generation will be built, if it will be approved, and what the cost recovery mechanism will be. The separation of generation and transmission under the RTO model has added more uncertainty in planning assumptions. CapX 202 initiated a push in the Minnesota Legislature to get greater certainty about cost recovery and the legislature gave the MN PUC the ability in 2005 to approve a tariff for automatic cost recovery of charges and without a rate case. Also, the transmission does not need to be constructed, just a certificate of need approved, to begin recovering costs. North Dakota passed legislation similar to Minnesota's, but the tariff is not confined to the state but rather can be applied anywhere in the MISO footprint. Wisconsin took another approach, with all IOUs legislated to put their transmission assets into one company, the American Transmission Company.

To deal with rate recovery in the long term, states have different tools. North Dakota has a pre-prudence opportunity available to utility companies. In South Dakota, the legislature gave the PUC the ability to consider the prudence of renewable energy requirements in other jurisdictions. Minnesota still does a prudency test, so costs to be recovered must be prudently incurred.

Commissioner Meyer answered a question about whether MISO's Regional Expansion Criteria and Benefits (RECB) approach to cost recovery is helpful. The RECB approach is a 50/50 postage stamp / license plate approach, a political compromise among the states done without looking at economic or engineering models. The decision was made based on the idea that there would be a large plant in one location, not a lot of smaller wind farms connection to a system where costs are much more difficult to figure out. Commissioner Meyer said he does not think that RECB is working but it can be improved. He mentioned the MISO white paper as a positive contribution towards trying to change the allocation into something more workable and he is optimistic that it will get fixed. Commissioner Reha said RECB II was not the exclusive model for sharing costs. Commissioner Hanson said regional postage stamp cost allocation is a sensible approach.

When asked about using renewable energy zones to develop South Dakota wind but have it paid for by load to the East, Commissioner Hanson indicated that he believes more in a national REO as opposed to zones. The challenge for a national REO is that some states do not have the same resources and would require green credits. Commissioner Wefald supported regional energy zones, not state-specific zones. Commissioner Meyer said postage stamps to the East is more reasonable than expecting states to pay for transmission that is being exported elsewhere, i.e. people should not pay for transmission that they do not benefit from.

Keynote Address: Senator John Thune

Senator John Thune represents South Dakota in the U.S. Senate and having grown up in the state's windiest city, Murdo, he is well acquainted with the state's wind power potential. Sen. Thune addressed how wind power represents a great opportunity for not just South Dakota but the entire U.S. Using wind energy reduces greenhouse gas emissions and dependence on foreign energy sources. He noted that South Dakota is already making strides in these efforts with its production of ethanol and other renewable fuels.

Sen. Thune spoke in favor of policymakers at the federal, state, and local level making decisions that promote energy independence. For instance, policymakers must ensure legislation guiding property rights, wind integration, cost recovery, and rates are set up to foster domestic energy development. At the federal level, the Energy Policy Act (EPAct) of 2005 recognized the need for more transmission by calling for the creation of National Interest Electric Transmission Corridors. EPAct directed the U.S. Department of Energy to establish these national corridors only in areas with high populations where the transmission grid is strained. Sen. Thune promoted the idea of clean energy corridors as part of the Senate debate on the 2007 Energy bill, which would expand National Interest Electric Transmission Corridors to include renewable energy and transfer wind energy from rural to urban areas. Sen. Thune's proposal would essentially create an interstate highway to help realize the Midwest's full wind energy potential. Not developing these domestic energy sources, Sen. Thune suggested, will put future generations at risk.

The federal farm bill also has energy provisions, with agricultural and energy issues becoming increasingly intertwined. The proposed Senate farm bill allows for transmission line easement payments from utilities to landowners to be tax deductible from federal income taxes. The bill also creates a 30% investment tax credit for qualified applications of small wind energy. Finally, Sen. Thune mentioned extension of the renewable energy production tax credit and expanding clean renewable energy bonds as

other mechanisms the federal government can offer to support wind development. He urged attendees to advocate for and educate policymakers about the importance of putting these policies in place.

Sen. Thune closed by saying that this is a unique time with great challenges and great opportunities. By promoting technological advancements and national cooperation, the U.S. can adopt more clean domestic energy resources. Sen. Thune thanked everyone for participating to address these issues important to South Dakota and the nation's future.

Questions and Answers

Sen. Thune provided the following responses to audience questions:

- The new Western Area Power Administration Administrator seems open to suggestions about how to accommodate more wind production. He is reaching out to tribes and looking for ways to utilize more complimentary technologies like wind and hydro.
- If the Army Corps of Engineers is approached with tangible proposals for how to time hydro releases to utilize more wind power, they would likely be open to that.
- A sharable PTC should continue to be pursued to help tribal wind projects. There are associated issues to be addressed, but we must be open to finding solutions. The tribes are well positioned to utilize wind energy and it would support economic development.

Next Steps: Building An Action Plan

The following are next steps suggested by meeting participants about how to ensure transmission access for wind energy in South Dakota. They are grouped under three headings: technical and financial, policies and development approaches, and public involvement.

Meeting Participants' Next Step Suggestions

Technical & Financial

- Develop corridors for transmission on an interregional basis with South Dakota and other states
- Seek solutions for "queue constipation" from FERC
- Remove barriers on CapX 2020 to move approval and construction to 2012 on Phase I rather than 2016 operation
- Develop an initiative to move wind production through Minnesota to Chicago, e.g. two 345 kV lines
- Use Manitoba Hydropower as backup for wind in South Dakota
- Use an energy tax to pay for transmission development and think large scale, essentially a transmission interstate highway
- Seek opportunities to combine energy sources and boost efficiency
- Build the case for transmission investments on real benefits to consumers
- Load wind onto the grid first
- Keep solutions as market-based as possible. Items that could be discussed:
    - Removing existing market distortions, e.g. subsidies for fossil-fuel technologies
    - Utilize dynamically-changing transmission allocation schemes
    - Support corporate, university, and national laboratory research on power electronics and HVDC
    - Look at storage technologies, e.g. pumped hydro, compressed air, electric vehicles, etc.
    - Re-examine market rules to be fair to all players

- Encourage regional and federal coordination on transmission development

Policies & Development Approaches

- Develop local generation for local industry based on the co-op model
- Build a transmission line to Gillette to access wind resources
- Build coalitions of groups to advocate lawmakers for cross-boundary collaboration on transmission
- Facilitate interstate and intrastate collaboration on regional transmission issues. The state of South Dakota could lead this effort
- Provide more support for wind power development on tribal lands
- Set a wind energy export goal and think big about South Dakota's wind contribution
- To garner greater public support for transmission, consider new models where landowners receive compensation for transmission lines similar to payments for wind turbine agreements
- Encourage energy conservation to reduce the need for additional transmission.

Public Involvement

- Provide better public education on why transmission is important and mobilize the public to talk to lawmakers
- Use television advertising nationwide to promote energy conservation
- Use radio airtime to deliver messages to South Dakotans about transmission line construction and energy conservation. Radio is less time consuming than attending open house meetings or reading newsletters. Provide information on what transmission lines make possible (e.g. air conditioning, dishwashers, etc.) and what contribution individual listeners make. The radio show can be co-sponsored by utilizes, FERC, USDA electrification program, DOE, Upper Great Plains and Near Mountain States agriculture departments, and turbine manufacturers.

National Wind Coordinating Collaborative (NWCC) members convened post-meeting to discuss 2008 Midwest regional activities. The group plans to put together a 2008 workshop in Indiana focused on how to move wind from the Dakotas eastward to the coast. Pursuing ways to help implement the transmission aspects of the Midwest Governors' *Energy Security and Climate Stewardship Platform for the Midwest* is also on NWCC's 2008 agenda.

Sioux Falls Convention Center
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The power of human connections

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NorthWestern Energy

EERC
Energy & Environmental Research Center®

Otter Tail Power Company

Midwest ISO
We manage power.

Wind Energy & Transmission: The South Dakota Landscape

November 29 - 30, 2007
Sioux Falls, SD

Draft Agenda

Purpose:

- To discuss why South Dakota offers remarkable opportunities for wind power
- To examine transmission constraints to greater wind power development in the state
- To look at possible solutions to South Dakota's transmission constraints that would facilitate more wind energy in the region.
- To explore options for implementing transmission solutions and enhance leadership involvement in these efforts.

Thursday, November 29th

12:15 pm	**Registration Opens**	**Location: Sioux Falls Convention Center, Ballroom A**
1:00 pm	**I. Opening Remarks** *What are the transmission and other needs to foster more wind energy in the Dakotas?*	*Lt. Governor Dennis Daugaard, State of South Dakota*
1:30 pm	**II. Welcome** ▪ Review meeting purpose and agenda ▪ *Transmission and Operational Needs to Support South Dakota's Wind*	*Abby Arnold & Katie Kalinowski, RESOLVE* *Charlie Smith, Chair, NWCC Transmission Workgroup and Executive Director, Utility Wind Integration Group*

SETTING THE STAGE

2:00 pm	**III. 20% Wind Energy: South Dakota's Role** *The President's Advanced Energy Initiative calls for 20% wind energy in the U.S. Panelists will discuss the role South Dakota could play in realizing that vision.*	*Moderator: Joel Dykstra, Representative, South Dakota Legislature*
	▪ **20% Wind Energy**	*Steve Lindenberg, Acting Program Manager, Wind and Hydropower Technologies, U.S. Department of Energy*
	▪ **Wind Integration Opportunities: Eastern Wind Integration and Transmission Study**	*Dave Corbus, Senior Engineer, National Renewable Energy Laboratory*
	▪ **Transmission Development & How South Dakota Fits Into The Picture** o **RTO & Inter-RTO** o **Regional** o **Tribal**	*Dale Osborn, Transmission Technical Director, Midwest ISO* *Terry Grove, Co-leader, CapX 2020* *Bob Gough, Secretary, Intertribal Council On Utility Policy*

3:20 pm	**BREAK**	
3:40 pm	**III. <u>20% Wind Energy: South Dakota's Role</u> *(continued)***	
	▪ **South Dakota Contributions to 20% Wind**	*Hunter Roberts, Assistant Energy Director, South Dakota Energy Infrastructure Authority* *Tom Feiler, Regional Development Manager, Clipper Windpower*
4:15 pm	**IV. <u>Transmission Challenges and Opportunities</u>** *Panel discussion of the following:* 1. *What needs to be done to in the short term (next 2-3 years), mid-term (3-5 years), and long term (>5 years) to increase transmission access for wind energy in South Dakota?* 2. *Who needs to be involved to implement these activities and who do we need buy-in from?* 3. *What does your organization perceive as the barriers?*	*Moderator: Dave Knudson, Senator, South Dakota Legislature* *Randall Oye, Transmission Access Analyst, Xcel Energy* *Clair Moeller, Vice President, Transmission Asset Management, Midwest ISO* *Ed Weber, Manager, Transmission System Planning , Western Area Power Administration* *Craig Poorker, Senior Field Representative, Great River Energy & Routing Lead, Brookings Line*
5:45 pm	**<u>Adjourn to Reception</u>**	**Location: Ballroom B**

Friday, November 30th

7:30 am	**Continental Breakfast**	**Location: Sioux Falls Convention Center, Ballroom A**

IMPLEMENTING THE PRIORITIES

8:00	**Review Day One and Look Ahead to Day Two Agenda**	**Location: Ballroom A**
8:15 am	**V. Leaders' Perspectives** *What are the priority activities to more efficiently use the transmission grid and get more transmission built? What are you or your organization doing now to achieve these goals? What other steps do you plan to take in the future?* *Each panelist offers his or her perspectives and observations, as well as responds panel-specific questions and questions from meeting participants.*	
	A. Load Serving Entities' Perspective ▪ *What opportunities do you see for wind development in your service territory?* ▪ *What are you or is your company doing to take full advantage of these opportunities?* ▪ *If a state or national renewable portfolio standard is passed, how will your organization contribute to the solution to meet these renewable goals?*	*Moderator: Gary Hanson, Commissioner, South Dakota Public Utilities Commission* *Mike McDowell, General Manager, Heartland Consumers Power District* *Mike Hanson, President, NorthWestern Energy* *Jim Wilcox, Government & Community Relations Manager, Xcel Energy*
9:00 am	**B. Control Area Operators' Perspective** **1) Within MISO** ▪ *How can seams issues be bridged to bring wind from outside MISO into MISO markets?* ▪ *How are you facilitating interconnection of wind from South Dakota into MISO markets?* ▪ *How can wind power be integrated into your systems more effectively?* ▪ *What role could you play to facilitate wind development in your systems? What about outside your systems?*	*Moderator: Mike Trykoski, Chairman, South Dakota Energy Infrastructure Authority* *Mike McMullen, Director West Regional Operations, Midwest ISO* *Ward Uggerud, Chief Operating Officer Energy Supply, Otter Tail Power Company* *Will Kaul, VP, Transmission, Great River Energy & Chairman, CapX 2020*

9:45 am ***(incl. 15 minute break)***	**2) MISO Seams** ▪ *How can wind power be integrated into your systems more effectively?* ▪ *What role could you play to facilitate wind development in your systems? What about outside your systems?* ▪ *How are you facilitating interconnection of wind from South Dakota into MISO markets?* ▪ *Would you consider accessing wind from outside your footprint?* ▪ *How do you see wind contributing to water management?*	*Moderator: Steve Kolbeck, Commissioner, South Dakota Public Utilities Commission* *Robert Riehl, Power Marketing Manager, Western Area Power Administration* *Ray Wahle, Director, Power Supply and Operations, Missouri River Energy Services* *Naomi Czachura, VP Rates & Regulatory Strategy, MidAmerican Energy Company* *Jeff Nelson, General Manager, East River Electric Power Cooperative*
11:30 am	**C. <u>Regulators' Perspective</u>** ▪ *How do differing state transmission siting approaches match up?* ▪ *What is needed to promote cooperation across state lines?* ▪ *What are states doing to address transmission financing?* ▪ *Is MISO's RECB (Regional Expansion Criteria and Benefits) approach to regional cost recovery helpful?*	*Moderator: Dusty Johnson, Chairman, Commissioner, South Dakota Public Utilities Commission* *Gary Hanson, Commissioner, South Dakota Public Utilities Commission* *Susan Wefald, Commissioner, North Dakota Public Service Commission* *Phyllis Reha, Commissioner, Minnesota Public Utilities Commission* *Mark Meyer, Commissioner, Wisconsin Public Service Commission*
12:15 pm	**LUNCH**	**Location: Ballroom B**
12:45 pm	**<u>Keynote Speaker</u>** **John Thune, Senator (R-SD), U.S. Senate**	
1:15 pm	**VI. <u>Next Steps: Building An Action Plan</u>** *Open discussion: What are the next steps needed for the region? Who will be involved and how?*	**Location: Ballroom A** *Katie Kalinowski, RESOLVE*
2:00 pm	**<u>Adjourn</u>**	

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Wind Energy & Transmission: The South Dakota Landscape

November 29 – 30, 2007
Sioux Falls, SD

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HANDOUT

Increasing Wind Energy & Transmission: The South Dakota Landscape
Nov 29 – 30, 2007

Next Steps: Building an Action Plan

What are the next steps needed for the region? Who will be involved and how?

Potential Next Steps:

- Resolve "seams" issues between MISO and non-MISO utilities in South Dakota, e.g. Western Area Power Administration and Basin, or work out a limited membership arrangement in MISO for these entities.
- Develop a plan to speed up or streamline the MISO queue system in the western Midwest. *What would you suggest to fix this system in the next 24 months?*
- Provide state incentives to promote wind development in states like North Dakota or South Dakota. *What state incentives would wind developers like to see?*
- Figure out how to best utilize the South Dakota Energy Infrastructure Authority. *Should the Authority use state incentives and bonding authority to finance "overbuild"?*
- Discuss the best way to jump start transmission development. *Is the best approach building 230 or 345 kV lines now or would it be developing higher capacity transmission corridors?*
- Get the governors to promote wind development. *What are specific ways the governor might do this?*
- Devise regulatory approaches to protect ratepayers from paying too much for transmission in a state that has low population and low native electrical load growth.
- Expand Western Area Power Administration's core function and charter mandate to require building and operating transmission to renewable energy resources.
- Authorize Western Area Power Administration to borrow funds to develop transmission for renewable resources to be paid back over 50 years.
- Establish and fund a Renewable Energy Fund to finance, in coordination with other states, new transmission to renewable energy zones.

Midwest Governors Association *Energy Security and Climate Stewardship Platform for the Midwest 2007*

The following potential next steps are drawn from the 2007 MGA energy security and climate stewardship platform

Renewable Electricity Policy Options (p. 15 – 17)

- Expand collaborative regional transmission planning and siting to enable future development of renewable electricity generation.
  - Inter-jurisdictional transmission planning and siting involving state regulators, utilities, regional transmission organizations, project developers, advocates, and others must be strengthened to optimize future transmission investments and ensure that the region's grid infrastructure enables robust development of renewable electricity generation and ensures broader system adequacy.
  - State regulatory commissions need to be empowered to define the "public interest" more broadly to include regional benefits.
- Incorporate transmission development requirements into existing state renewable energy objectives and standards.
- Pursue a multi-state transmission initiative to facilitate construction and delivery to market of a large amount of new renewable electricity generation, together with power from other lower-carbon generation facilities.
  - Policy makers and other stakeholders need to engage in regional integrated resource planning efforts to identify multi-state transmission and generation initiatives.
  - In conjunction with regional IRP efforts, address cost-benefit analysis and cost allocation issues.
- Apply the findings of wind integration studies.
- Make better use of existing transmission infrastructure and capacity through next generation grid management.

Establishing a Regional Electricity Transmission Adequacy Initiative (p. 29 – 30)

- Develop and recommend to governors and premier specific strategies and steps to be taken for ensuring regional transmission adequacy; participating states / province: Iowa, Kansas, Michigan, Minnesota, North Dakota, Ohio, South Dakota, Wisconsin, and Manitoba. Deliverables to include:
  - Identified partners, methodology, and timeline for conducting a state-by-state evaluation of expected new megawatts of wind power development through 2020 and corresponding needed transmission infrastructure.
  - Proposed recommendations for how to resolve short-term RTO interconnection and queue congestion that results in long lead times for interconnects into the grid
  - A proposed mechanism for dialogue and planning among utilities, transmission companies, state utility regulatory commissions, state electric transmission

authorities, regional transmission organizations (RTOs), and nongovernmental stakeholders to:

  - Facilitate construction of transmission needed for wind power (modeled after CAPX 2020).
  - Create a regional transmission plan for wind power development that identifies what transmission needs to be built where.
  - Ensure broader system reliability over time.

- Key elements and next steps for developing a transmission cost share and cost recovery mechanism for the build-out of resource transmission.

Developing Regional Low-Carbon Energy Transmission Infrastructure Initiative (p. 33)

- Pursue a collaborative, multi-jurisdictional transmission initiative that demonstrates how various economical low-carbon energy resources and generation technologies can be deployed synergistically and for broad regional benefit; participating states/province: Iowa, Kansas, Michigan, Minnesota, North Dakota, Ohio, South Dakota, Wisconsin, and Manitoba.

Your Ideas:

Attendees are invited to record your suggested next steps below throughout the course of the meeting. If you are willing, we will collect your ideas at the end for the group's consideration.

Want to Help?

If you are interested in helping move suggested next steps forward, please provide your contact info:

NAME:

EMAIL ADDRESS: