

NORTH DAKOTA LEGISLATIVE MANAGEMENT

Minutes of the

ENERGY DEVELOPMENT AND TRANSMISSION COMMITTEE

Wednesday, January 24, 2018
Roughrider Room, State Capitol
Bismarck, North Dakota

Senator Rich Wardner, Chairman, called the meeting to order at 9:00 a.m.

Members present: Senators Rich Wardner, Brad Bekkedahl, Jim Dotzenrod, Merrill Piepkorn, David S. Rust, Jessica Unruh; Representatives Mike Brandenburg, Ben Koppelman, Corey Mock, Todd Porter

Members absent: Representatives Tracy Boe, Gary R. Sukut

Others present: See [Appendix A](#)

It was moved by Senator Rust, seconded by Senator Unruh, and carried on a voice vote that the minutes of the November 29-30, 2017, meeting be approved as distributed.

Chairman Wardner said the committee is in the process of gathering information on electrical generation markets as a part of the committee's study of wind energy taxation. He said the committee received an overview of electrical utility operations in October 2017. He said the committee seeks to understand the pricing of electricity in wholesale markets to evaluate the parity of wind energy taxation in comparison to the taxation of other energy sources.

ELECTRICAL GENERATION MARKET REVIEW

Mr. Dale Niezwaag, Vice President of Government Relations, Basin Electric Power Cooperative; and Mr. Jay Skabo, Vice President of Electric Supply, Montana-Dakota Utilities reviewed information ([Appendix B](#)) regarding electrical generation markets.

Mr. Skabo said utilities submit an offer price for each generation unit to sell power into the power pool as a part of the wholesale electrical market. He said the offer price for each unit is based on the variable cost to operate the unit, which is primarily the cost of fuel. He said the regional transmission organizations sort the offers from the lowest price to the highest price and determine how much electricity needs to be purchased to supply the customers in the entire power pool. He said the regional transmission organization dispatches electricity throughout the power pool starting with the units that have the lowest offering prices and continuing to dispatch power from successively more expensive units until enough electricity is available to supply the power pool. He said the regional transmission organization purchases the power from the utilities based on the clearing price, which is the offer price from the last generation unit that had power dispatched into the power pool.

Mr. Skabo said wind-powered generation units are usually offered at \$0 because the fuel (wind) has no cost. He said some wind-powered generation units may be offered at negative prices in certain circumstances because operators still have revenue from the federal production tax credits for wind. He said the low offer prices from wind-powered generation units may result in lower clearing prices. He said the lower market clearing prices can result in financial losses for must-run generation units, such as coal and nuclear power plants, which have minimum operating thresholds.

In response to a question from Representative Brandenburg, Ms. Valerie Weigel, Director of Marketing Financial Analytics, Basin Electric Power Cooperative, said approximately 20 percent of the time that Basin Electric Power Cooperative's coal-fired power plants are operating, the market price received for selling power is less than the cost of the fuel used to operate the plants requiring Basin Electric Power Cooperative to decrease the power generation to minimum operating levels to mitigate financial losses.

Mr. Niezwaag said utilities purchase power back from the regional transmission organization based on the clearing price in order to supply the customers in their local service areas. He said the clearing price provides the lowest price associated with the direct cost of generating the electricity which benefits end users over the long term. He said utilities may make a minimal profit if the utility sells more power into the pool than it purchases to serve

customers. He said the opportunities to profit in the wholesale markets are limited because the power supply and demand are constantly changing resulting in different generation units being dispatched and different amounts of power purchased throughout the day.

In response to a question from Representative Porter, Ms. Weigel said wholesale electrical markets provide the lowest direct costs to generate electricity for customers, which comprise a portion of the retail price that utilities charge to end users. She said retail customers may not realize cost-savings on their electrical bills because the retail electricity prices also include other expenses, such as the costs associated with environmental regulations, transmission lines, facility maintenance, and administration.

Mr. Skabo said low natural gas prices have led to the construction of more natural gas power plants since the low prices allow the electricity to be generated at a lower cost. He said coal power plants can remain competitive with natural gas power plants, particularly coal power plants that are located near coal mines, as is the case for most coal power plants in North Dakota. He said environmental regulations and state taxes on electricity or electrical generation fuel sources will affect the types of new power plants that utilities decide to construct.

In response to a question from Senator Piepkorn, Mr. Niezwaag said concerns about environmental regulations and economic factors, such as the low cost of natural gas, will likely limit the number of new coal power plants constructed in the near future. He said advances in technology, particularly carbon dioxide capture technology, could result in the construction of more coal power plants.

REGIONAL TRANSMISSION ORGANIZATIONS

Midcontinent Independent System Operator, Inc.

Mr. Brian Tulloh, Executive Director, North Region External Affairs Division, Midcontinent Independent System Operator, Inc., presented information ([Appendix C](#)) regarding electricity pricing and dispatch in the Midcontinent Independent System Operator (MISO) service area. He said the MISO service area includes 15 states and 42 million customers. He said the electrical generating capacity in MISO totaled 174,000 megawatts as of 2017, which was comprised of a variety of sources, including 43 percent from coal, 32 percent from natural gas, 14 percent from nuclear, 8 percent from wind, and 3 percent from other energy sources. He said North Dakota exports approximately 50 percent of the electrical power produced, which is facilitated by an organized market, such as MISO.

Mr. Tulloh said the northwestern region of the MISO service area, which includes North Dakota, needed to import electricity from other MISO regions on December 29, 2017, primarily because of a lack of wind-powered generation during a cold weather event. He said a few days later, on January 2, 2018, the northwestern region was able to export electricity to other MISO regions, even though customer demand remained high during the cold weather event, because of excess generation from wind power. He said membership in an organized market, such as MISO, creates efficiencies and helps to ensure customers have access to a reliable supply of electricity.

In response to a question from Senator Bekkedahl, Mr. Tulloh said MISO helps to coordinate new projects and the retirement of existing units while maintaining reliability and efficiency. He said member utilities are required to notify MISO of their intent to retire a unit after which MISO evaluates any potential reliability issues. He said MISO may require the unit to continue operating if the retirement of the unit would create a reliability issue and no other alternative solutions can be identified.

Southwest Power Pool, Inc.

Mr. Lanny Nickell, Vice President, Engineering, Southwest Power Pool, Inc., presented information ([Appendix D](#)) regarding electricity pricing and dispatch in the Southwest Power Pool (SPP) service area. He said the SPP service area includes 14 states and 17.5 million customers. He said the electrical generating capacity in SPP totaled 65,000 megawatts in 2017, which was comprised of a variety of sources, including 30 percent from coal, 42 percent from natural gas, 20 percent from wind, and 8 percent from other energy sources.

Mr. Nickell said the services provided by SPP are valued at approximately \$1.7 billion per year resulting in savings of approximately \$5.71 per month for an average residential customer within the SPP service area based on a study conducted by SPP. He said during 2017, the hourly market clearing price was less than \$0 for approximately 417 hours, or 5 percent of the time, in the real-time market and approximately 40 hours, or .5 percent of the time, in the day-ahead market. He said the energy price trends over the past 10 years generally followed the price of natural gas, ranging from approximately \$50 per megawatt-hour in 2008 to approximately \$20 per megawatt-hour in 2015. He said the majority of new electrical generation projects in the past 5 years have been wind turbine projects, which are able to supply low-cost electricity since there are no fuel costs associated with wind power.

In response to a question from Representative Porter, Mr. Nickell said SPP is a nonprofit organization. He said the operating costs of the organization are provided from fees charged to the members, which is based on the amount of service provided to each utility member.

In response to a question from Representative Porter, Mr. Nickell said regional transmission organizations allow negative pricing as a tool to adjust electrical supply based on customer demand. He said the Federal Energy Regulatory Commission oversees the wholesale electricity rates and must approve changes to the rate structures in the regional transmission organizations.

In response to a question from Representative Brandenburg, Mr. Nickell said approximately \$3 billion of future transmission line projects are planned within the SPP service area to cost-effectively distribute power from wind farms and other power plants to customers and to increase reliability within the service area.

Federal Energy Regulatory Commission Order Update

Mr. Anthony T. Clark, Senior Advisor, Wilkinson Barker Knauer, LLP, presented information ([Appendix E](#)) regarding an update on the Federal Energy Regulatory Commission order to examine the resilience of the power grid. He said the Federal Energy Regulatory Commission rejected a proposal from the federal Department of Energy on January 8, 2018, which would have created a new compensation system for electricity from power sources that could guarantee a 90-day fuel reserve such as the power from coal and nuclear. He said under a new order, the Federal Energy Regulatory Commission is in the process of gathering input from regional transmission organizations to define electrical grid resilience, to assess the risks to electrical supply, and to understand the potential solutions to address electrical supply disruptions. He said the order provides an opportunity for regional transmission organizations to provide input, but potential outcomes for electrical markets remain unclear.

ENERGY SUPPLY AND PRICE VARIATIONS

ALLETE, Inc.

Ms. Julie Pierce, Vice President of Strategy and Planning, ALLETE, Inc., presented information ([Appendix F](#)) regarding the impact of recent cold weather on ALLETE's operations. She said ALLETE relied on market purchases to meet customer demand during the recent cold weather event. She said some of the wind turbines were unable to operate in the cold weather due to the operating limits of the lubricants and sensitive electronic components in the turbines. She said ALLETE also experienced an unanticipated outage with one of the company's coal units. She said ALLETE purchased the additional electricity that was needed from other utilities using special agreements and from the MISO market.

Basin Electric Power Cooperative

Mr. Niezwaag presented information ([Appendix G](#)) regarding the impact of recent cold weather on Basin Electric Power Cooperative's operations. He said the cold weather resulted in frozen natural gas pipelines in the Bakken region and a compressor outage along the Northern Border pipeline. He said the natural gas supply issues caused a rapid increase in natural gas prices which increased the prices in the wholesale electricity markets for the SPP service area. He said electricity prices increased from \$12 per megawatt-hour on December 25, 2017, to \$93 per megawatt-hour on December 27, 2017. He said natural gas generation units often serve as a backup for wind power but some were unable to operate during the cold weather due to natural gas supply issues while others were operating with very high costs due to the natural gas price increases. He said coal power had stable pricing and reliable operations during the cold weather event.

Great River Energy

Mr. Rick Lancaster, Vice President and Chief Generation Officer, Great River Energy, presented information ([Appendix H](#)) regarding variations in Great River Energy's operations during a recent cold weather event. He said the operations for Great River Energy were also impacted by the natural gas supply issues and associated natural gas price volatility that Basin Electric Power Cooperative experienced. He said Great River Energy observed market prices as high as \$207 per megawatt-hour during the cold weather event. He said the company relied on energy price hedges to mitigate the impact of the high prices and used fuel oil in some generation units rather than natural gas during the cold weather event.

Minnkota Power Cooperative

Mr. Todd Sailer, Senior Manager of Power Supply and Resource Planning, Minnkota Power Cooperative, presented information ([Appendix I](#)) regarding the impact of recent cold weather on Minnkota Power Cooperative's operations. He said the prices in both the day-ahead market and the real-time market increased significantly during the last week of December 2017 and the first week of January 2018 within certain areas of the MISO markets due to the cold weather. He said Minnkota utilized its off-peak demand response program, which allows the company to reduce the electricity supplied to customers that participate in the program. He said without the program, Minnkota would have needed significant market purchases to supply customers.

Montana-Dakota Utilities

Mr. Skabo presented information ([Appendix J](#)) regarding variations in the operations of Montana-Dakota Utilities during a recent cold weather event. He said the company's generation units performed as designed. He said one of the coal-powered units was out of service for repair during the cold weather event and was unable to be restarted until temperatures were warmer. He said some market purchases from MISO were needed to meet customer demand, but were anticipated because of the planned outages for repairs.

Otter Tail Power Company

Mr. Bradley E. Tollerson, Vice President, Energy Supply, Otter Tail Power Company, presented information ([Appendix K](#)) regarding the impact of recent cold weather on Otter Tail Power Company's operations. He said the company's coal and natural gas units performed as designed. He said Otter Tail Power utilized some oil-powered units during highest demand periods. He said the company's actual generation was approximately 3 percent lower than the potential generation from wind power because some wind turbines were shutdown due to the cold weather. He said some of the company's wind turbines have heating elements that allow them to continue operating in temperatures as low as 25 degrees below zero.

Xcel Energy, Inc.

Ms. Laura McCarten, Regional Vice President, Xcel Energy, Inc., presented information ([Appendix L](#)) regarding the impact of recent cold weather on the operations of Xcel Energy. She said Xcel did not have any electricity supply issues to customers but did experience high natural gas prices due to supply disruptions. She said Xcel has a program similar to the one used by Minnkota Power Cooperative that allows Xcel to limit the electricity supply to customers that participate in the program. She said Xcel had sufficient electricity supply and did not need to limit service to any customers. She said the cold weather event did increase electricity prices for a short period of time, but overall, prices have been stable.

WIND ENERGY OPERATIONS

Mr. Mark Walter, Director of Legislative and Regulatory Affairs, Tradewind Energy, Inc., presented information ([Appendix M](#)) regarding an overview of Tradewind Energy's operations in North Dakota and other information about wind energy. He said Tradewind Energy develops solar and wind energy projects for utility companies in the United States, but does not own or operate any of the projects that it develops. He said the company developed over \$7 billion of projects, which are located in Kansas, Oklahoma, North Dakota, Missouri, Georgia, and North Carolina. He said the timeline for developing a wind turbine project ranges from 4 to 6 years, which includes feasibility studies, regulatory approvals, easements, engineering designs, and site development. He said the wind energy industry paid an estimated \$7.7 million in state and local taxes in North Dakota in 2016 and provides \$14 million annually in lease payments to landowners. He said a competitive tax structure in North Dakota is important for attracting investments for developing wind projects.

In response to a question from Senator Unruh, Mr. Walter said North Dakota provides valuable opportunities for wind turbine development because of the good wind conditions, a favorable regulatory environment, low development costs, and connection points to electrical grids of two regional transmission organizations.

Chairman Wardner said the items on the agenda related to the energy tax incentives and natural gas pricing will be moved to the committee's next meeting. He said the committee's next meeting will be in Bismarck in March 2018. He said the committee also has a meeting scheduled for May 9-10, 2018, in Grand Forks.

No further business appearing, Chairman Wardner adjourned the meeting at 3:50 p.m.

Adam Mathiak
Senior Fiscal Analyst

ATTACH:13