

## NORTH DAKOTA LEGISLATIVE MANAGEMENT

### Minutes of the

## ENERGY DEVELOPMENT AND TRANSMISSION COMMITTEE

Wednesday, May 9, 2018

Discovery Hall, Energy and Environmental Research Center, 15 North 23<sup>rd</sup> Street,  
Grand Forks, North Dakota

Thursday, May 10, 2018

Humboldt Room, Energy and Environmental Research Center, 15 North 23<sup>rd</sup> Street,  
Grand Forks, North Dakota

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

**Members present:** Senators Rich Wardner, Brad Bekkedahl, Merrill Piepkorn, David S. Rust, Jessica Unruh; Representatives Mike Brandenburg, Corey Mock, Todd Porter, Gary R. Sukut

**Members absent:** Senator Jim Dotzenrod; Representatives Tracy Boe, Ben Koppelman

**Others present:** Senator Ray Holmberg, Grand Forks, member of the Legislative Management  
Curt Kreun, State Senator, Grand Forks  
Arne Osland, State Senator, Mayville  
Gary Paur, State Representative, Gilby  
Mark Sanford, State Representative, Grand Forks  
See [Appendix A](#) for additional persons present.

**It was moved by Senator Rust, seconded by Senator Unruh, and carried on a voice vote that the minutes of the March 8, 2018, meeting be approved as distributed.**

### EMPOWER ND COMMISSION

Mr. Jay Schuler, Commissioner, Department of Commerce, provided comments regarding the activities of the EmPower ND Commission. He said members from the commission's three subcommittees--public policy, research and development, and infrastructure--will provide an update to the Energy Development and Transmission Committee pursuant to North Dakota Century Code Section 17-07-01. He said the commission has not identified any specific energy policy recommendations for the 2017-18 interim. He said the commission continues to promote North Dakota's energy resources and is encouraging companies to explore opportunities to develop value-added products within North Dakota.

### Public Policy Update

Mr. Dale Niezwaag, Vice President of Government Relations, Basin Electric Power Cooperative, presented information ([Appendix B](#)) regarding an update from the public policy subcommittee. He said the subcommittee reviewed federal energy policies, including the federal Clean Power Plan, federal income tax credits, and pending federal legislation. He said the subcommittee reviewed the actions of the 2017 Legislative Assembly related to energy policy changes, including policies related to wind turbine decommissioning. He said the subcommittee is supportive of state policies that will continue to provide funding for energy-related research and development. He said the electrical generation industry is concerned about new requirements from the Public Service Commission, which require utilities to provide mitigation payments to nonprofit organizations to address wildlife impacts associated with wind turbine development.

Representative Brandenburg said mitigation payments are currently required for wind turbine projects but could impact other energy development projects as well as the agriculture industry. He said the Public Service Commission's policies may not provide adequate oversight to ensure the nonprofit organizations are using the mitigation payments to address wildlife issues. He said the interim Natural Resources Committee also received information regarding the mitigation payments.

### Research and Development Update

Mr. Jason Bohrer, President and Chief Executive Officer, Lignite Energy Council, provided comments regarding an update from the research and development subcommittee. He said the subcommittee received information regarding current research projects and the availability of state funding for research. He said the subcommittee reviewed changes to the funding for the lignite research fund, which were approved by the 2017 Legislative Assembly. He said the subcommittee would support efforts to provide additional state funding for research projects.

Mr. Ron Ness, President, North Dakota Petroleum Council, suggested the Legislative Assembly consider using a portion of the legacy fund earnings to support energy-related research.

### Infrastructure Update

Mr. Ron Day, Government and Public Affairs Manager, Andeavor, provided comments regarding an update from the infrastructure subcommittee. He said the energy industry and the state have made significant investments in infrastructure development during the past 5 years, including pipelines, processing facilities, roads, and airports. He said the infrastructure development allows the energy industry to efficiently transport workers, equipment, and energy, which helps the state's economy to grow. He said additional infrastructure development will be needed in the future to support the growth in the energy industry.

In response to a question from Representative Porter, Mr. Mark B. Bring, Associate General Counsel and Director, Legislative Affairs, Otter Tail Power Company, Fergus Falls, Minnesota, said the infrastructure subcommittee did not discuss opportunities to develop value-added products within the state. He said the state has policies to encourage the development of value-added products and to regulate those products. He said the state may need to increase marketing efforts to promote the state's business-friendly environment in order to attract developers.

## ENERGY AND ENVIRONMENTAL RESEARCH CENTER - TOUR

Mr. Thomas A. Erickson, Chief Executive Officer, Energy and Environmental Research Center, led the committee on a tour of the Energy and Environmental Research Center to observe some of the center's current research projects.

Mr. James Sorensen, Principal Geologist, Energy and Environmental Research Center, distributed information ([Appendix C](#)) regarding shale research with an electron microscope. He said researchers at the center are analyzing Bakken shale rocks at a microscopic level to better understand how oil is trapped in the rocks and how the oil can be released from the rocks.

Mr. Jason Laumb, Principal Engineer and Coal Utilization Group Lead, Energy and Environmental Research Center, distributed information ([Appendix D](#)) regarding carbon dioxide capture technology. He said the center is testing a small-scale prototype to extract carbon dioxide from power plant emissions. He said the prototype passes emission gases through a liquid solution causing the carbon dioxide gas to bind to the liquid solution. He said the remaining emission gasses can be released into the atmosphere while the carbon dioxide can be extracted from the liquid solution in a separate containment area.

Mr. Ted Aulich, Principal Process Chemist, Energy and Environmental Research Center, distributed information ([Appendix E](#)) regarding a low-pressure process to manufacture ammonia for fertilizer. He said the current process to manufacture ammonia relies on large quantities of hydrogen and nitrogen subjected to high pressure. He said the low-pressure process that is under development uses a specialized polymer membrane and electricity to combine hydrogen and nitrogen to produce ammonia. He said researchers from the Energy and Environmental Research Center worked with researchers at North Dakota State University to develop the specialized polymer membrane.

## LM WIND POWER

### Overview

Mr. Jagadish Rao S V, Plant Director, LM Wind Power, Grand Forks, presented information ([Appendix F](#)) regarding an overview of LM Wind Power's operations and the process to manufacture wind turbine blades. He said LM Wind Power manufactures wind turbine blades at 14 sites spread across eight countries. He said the manufacturing site in Grand Forks has been operating since 1999 and currently employs 862 people. He said approximately 24,000 wind turbine blades have been manufactured at the site since 1999. He said the longest blade currently in production is over 200 feet long, which required additions to the building to accommodate the larger blade. He said the blades are manufactured using glass fabric, balsa wood, and glue. He said the blades consist of two "shell-like" halves and a support beam that runs the length of the blade. He said the two halves are manufactured in molds and then glued together along with the support beam to create one seamless blade. He said the blades are polished and painted before being shipped to customers by truck or rail.

## Tour

The committee traveled to the LM Wind Power manufacturing site, 1580 South 48<sup>th</sup> Street, Grand Forks. The committee conducted a tour of the manufacturing site and observed the process for manufacturing wind turbine blades.

## ENERGY AND ENVIRONMENTAL RESEARCH CENTER - ACTIVITIES

### Overview

Mr. Erickson presented information ([Appendix G](#)) regarding an overview of the Energy and Environmental Research Center's activities. He said the center's current research priorities include coal utilization and emissions, carbon management, oil and gas, alternative fuels and renewable energy, and water utilization in the energy industry. He said the center had approximately \$41.5 million of contract funding in fiscal year 2017, of which approximately 83 percent was from private industry. He said the center has been involved in a number of research projects to address energy and environmental issues, including projects to reduce natural gas flaring, to remove pollutants from coal power plant emissions, and to improve pipeline safety.

### Carbon Dioxide Reduction Projects

Mr. John A. Harju, Vice President for Strategic Partnerships, Energy and Environmental Research Center, presented information ([Appendix H](#)) regarding the Plains Carbon Dioxide Reduction partnership. He said the partnership consists of dozens of organizations researching solutions for carbon dioxide emissions, including sequestration and enhanced oil recovery. He said the Bell Creek demonstration project utilizes carbon dioxide from sources in Wyoming for enhanced oil recovery at an oil well in Montana. He said the Bakken Formation contains billions of barrels of oil, some of which could be recovered using enhanced oil recovery with carbon dioxide. He said researchers from the Energy and Environmental Research Center are analyzing the potential challenges for enhanced oil recovery in the Bakken Formation, including the geology of the Bakken Formation and the availability of carbon dioxide in North Dakota.

### Oil Well Refracturing

Mr. Harju presented information ([Appendix I](#)) regarding the results of a study related to oil well refracturing. He said researchers from the Energy and Environmental Research Center analyzed the performance of 165 oil wells in the Bakken Formation that have been refractured. He said oil production from the wells increased after the refracturing was completed, but the profitability depends on the cost to refracture and the amount of revenue from the additional production. He said the researchers created a simulation to analyze hypothetical cost and revenue scenarios to determine the profitability from refracturing. He said the results from the simulation indicated that approximately 80 percent of refractures may be profitable. He said researchers estimate approximately 1,000 oil wells in the Bakken Formation could be refractured resulting in hundreds of millions of dollars of additional tax revenue for the state.

In response to a question from Senator Bekkedahl, Mr. Harju said refracturing is currently being done on older oil wells with a single-stage fracture. He said newer oil wells with multi-stage fractures are more challenging to refracture and may have a limited potential to increase oil production.

### State Energy Research Center

Mr. Erickson presented information ([Appendix J](#)) regarding preliminary concepts for a state energy research center. He said a state energy research center could help to expand North Dakota's economy by developing new technology for the energy industry. He said research is an important step in the process to transform an idea into a workable solution that can eventually be commercialized. He said the Energy and Environmental Research Center has experience working with many types of energy sources and different types of technology. He said state funding for a state energy research center could be leveraged with matching funds to produce a significant economic benefit for the state.

## ENERGY POLICY

Mr. Michael J. Nasi, Partner, Jackson Walker LLP, Austin, Texas, presented information ([Appendix K](#)) regarding energy policies. He said recent weather events demonstrate the importance of resilience in the electric grid and a lack of transparency limits customer understanding of electricity costs. He said a cold weather event in January 2018 strained the electrical grid in the northeastern portion of the United States due to a lack of wind power. He said electrical customers in Texas may experience brownouts or blackouts in the near future because of a reliance on intermittent power sources. He said customers expect reliable service but intermittent power sources, such as wind and solar, may not be available to supply customers when demand surges during periods of extreme heat or extreme cold. He said federal and state tax incentives are available for all major energy sources, but the value of the incentives is not transparent on customer bills. He said some energy sources receive more tax incentives than others allowing utilities to sell power below the market rate, which may give some energy sources an unfair

competitive advantage. He said utilities have been constructing new transmission lines to increase resilience and to connect new supplies of renewable energy. He said the cost of the new transmission lines has been passed on to customers resulting in higher utility bills. He said protecting customers and fair pricing are important factors to consider when developing state energy policies.

### OTHER

Dr. Kenneth J. Hellevang, Professor and Extension Engineer, North Dakota State University Extension Service, provided comments regarding research and education. He said federal funding for university research and education has been decreasing. He said the extension service now provides some energy-related education in addition to agriculture-related education because of the impact of oil and gas development activity.

Representative Brandenburg said future research may provide an opportunity for more collaboration between North Dakota State University and the University of North Dakota.

Chairman Wardner recessed the meeting at 4:50 p.m. and reconvened the meeting on Thursday, May 10, 2018, at 7:30 a.m. He said the committee will attend an energy summit to receive information about updates in the energy industry.

Chairman Wardner recessed the meeting at 7:50 a.m. for attendance at the Energizing North Dakota's Future Partnership Summit.

Chairman Wardner reconvened the meeting at 11:55 a.m. He said a date for the next meeting has not yet been determined. He said the committee will discuss the oil and gas tax revenue allocations to hub cities and wind energy taxation at the next meeting.

No further business appearing, Chairman Wardner adjourned the meeting at 12:00 noon.

---

Adam Mathiak  
Senior Fiscal Analyst

ATTACH:11