

## NORTH DAKOTA LEGISLATIVE MANAGEMENT

## Minutes of the

**ENERGY DEVELOPMENT AND TRANSMISSION COMMITTEE**

Tuesday, August 1, 2017  
Harvest Room, State Capitol  
Bismarck, North Dakota

Senator Rich Wardner, Chairman, called the meeting to order at 9:30 a.m.

**Members present:** Senators Rich Wardner, Brad Bekkedahl, Jim Dotzenrod, Merrill Piepkorn, Jessica Unruh; Representatives Tracy Boe, Mike Brandenburg, Ben Koppelman, Corey Mock, Todd Porter, Gary R. Sukut

**Members absent:** Senator David S. Rust

**Others present:** See [Appendix A](#)

The Legislative Council staff reviewed the [Supplementary Rules of Operation and Procedure of the North Dakota Legislative Management](#).

Chairman Wardner said the Energy Development and Transmission Committee was assigned studies regarding wind energy taxation, hub city oil and gas tax revenue allocations, and oil well refracturing. He said the committee plans to travel to the hub cities during the interim to seek input from city and school representatives regarding the impact of oil and gas development activity and funding needs. He said developing a balanced energy policy is important to increase the development of energy production from clean power sources while also preserving existing energy development, such as coal power. He said the committee needs to gather information on the economics of refracturing oil wells to understand the financial impact of any potential tax incentives the committee may propose. He said the committee will receive reports from various state agencies and organizations during the interim as required by statute and as assigned by the Legislative Management.

**BACKGROUND INFORMATION**

The Legislative Council staff presented a memorandum entitled [Comprehensive Energy Policy - Background Memorandum](#). He said the memorandum provides information on the committee's prior studies and bill draft recommendations. He said the memorandum highlights major energy-related legislation approved by the 2017 Legislative Assembly.

The Legislative Council staff presented a memorandum entitled [Wind Energy Taxation and Revenue Distribution Study - Background Memorandum](#). He said during the 2015-16 interim, the Energy Development and Transmission Committee recommended House Bill No. 1028 relating to a sales and use tax exemption for materials used in the construction of wind turbines, but the bill was not approved by the 2017 Legislative Assembly. He said the memorandum summarizes the provisions of the property tax, the electric generation tax, the sales and use tax exemption, and the income tax credit related to wind energy.

The Legislative Council staff presented a memorandum entitled [Hub City and Hub City School District Allocation Study - Background Memorandum](#). He said the Energy Development and Transmission Committee studied the entire oil and gas tax allocation formula during the 2015-16 interim, but made no recommendations at the conclusion of the study. He said the memorandum provides information on the historical allocation formulas and historical employment data related to hub cities.

The Legislative Council staff presented a memorandum entitled [Oil Well Refracturing Study - Background Memorandum](#). He said the Energy Development and Transmission Committee and the Taxation Committee received information during the 2015-16 interim regarding enhanced oil recovery, primarily related to recovery methods employing carbon dioxide. He said the memorandum provides an overview of the hydraulic fracturing process and includes information on current tax incentives related to enhanced oil recovery.

## **WIND ENERGY STUDY**

### **Basin Electric Power Cooperative**

Mr. Dale Niezwaag, Vice President, Government Relations, Basin Electric Power Cooperative, presented information ([Appendix B](#)) regarding wind energy taxation, including changes approved by the 2015 Legislative Assembly, comparisons to other states, and comparisons to the taxation of other energy sources. He said the 2015 Legislative Assembly approved Senate Bill No. 2037 to provide for a payment in lieu of property tax for certain centrally assessed wind turbines. He said the payment in lieu of tax is the electrical generation tax, which is estimated to be the equivalent of valuing wind turbines at 4.5 percent of the assessed value. He said North Dakota's electrical generation tax is competitive with the wind energy taxes in South Dakota and Minnesota and is approximately three times lower than the tax in Montana. He said a wind turbine operating at 40 percent capacity pays approximately \$1.21 of tax per megawatt of electricity produced, the same as a coal power plant operating at 70 percent capacity, based on sample data from existing facilities.

Mr. Niewzwaag said the federal production tax credit provides a federal corporate income tax credit of \$23 per megawatt hour of electrical production for 10 years for projects that started construction prior to 2017. He said the federal credit will be phased down to 80 percent for projects starting construction in 2017, to 60 percent for projects starting construction in 2018, and to 40 percent for projects starting construction in 2019. He said a 150 megawatt project operating at 45 percent capacity would receive \$136 million of tax credits over 10 years if the project started construction prior to 2017. He said the tax credits would total \$54.4 million if the same project were not started until 2019.

In response to a question from Senator Bekkedahl, Mr. Niezwaag said the power producer receives the federal production tax credit, but the benefit is passed on to purchasers through lower prices.

Mr. Niezwaag said balancing the supply of electrical power with consumer demand is a challenge. He said coal power can provide a stable base load, but wind power is intermittent. He said the opportunity to sell power into the electrical grid is available to wind power operators only when the wind turbines are producing. He said market pricing for wind power may include discounts because wind power operators need to attract purchases while the power is available. He said changes in power demand and power supplies from other sources can result in fluctuations to base load. He said Basin Electric Power Cooperative is in the process of conducting an engineering study to determine the effect of fluctuations in base load on the equipment in coal power plants. He said the coal power plants need to operate at 45 percent capacity or more for emissions technology to work properly for regulatory compliance.

In response to a question from Representative Porter, Mr. Niezwaag said plans for the long-term sustainability of coal power vary from company to company and even from facility to facility. He said the age of the facility and the availability of other power sources are important factors for companies that are deciding to maintain or close coal power plants.

In response to a question from Senator Piepkorn, Mr. Niezwaag said the intermittency of energy production from renewable sources remains a challenge due to the cost and technological limitations of energy storage systems.

In response to a question from Chairman Wardner, Mr. Niezwaag said Basin Electric Power Cooperative is working with the EmPower North Dakota Commission to gather additional information to present at a future meeting regarding the basic operating characteristics of electrical production, market comparisons for different types of energy sources, and various company perspectives for energy production.

### **Public Comments**

Ms. Carlee McLeod, President, Utility Shareholders of North Dakota, provided comments in support of the committee's study of wind energy taxation. She suggested the committee receive information from investor-owned utilities, electric power cooperatives, and regional transmission organizations because companies may have differing views on the impact of wind energy taxation.

### **Tax Department**

Mr. Ryan Rauschenberger, Tax Commissioner, presented information ([Appendix C](#)) regarding state taxes and state tax incentives related to wind energy. He said the income tax credit for wind turbine projects is not available for projects started on or after January 1, 2015, while the sales and use tax exemption for materials used in the construction of wind turbines expired on January 1, 2017. He said with the expiration of the sales and use tax exemption, approximately \$7 million of sales taxes would be collected if a 150 megawatt project were completed during the 2017-19 biennium. He said wind turbines are subject to either property taxes or an electrical generation tax, which is a payment in lieu of property taxes. He said the county treasurer distributes the tax collections to the taxing districts within the county based on the location of the turbines. He said approximately \$6 million of property taxes and electrical generation taxes were levied in 2015 and distributed to local taxing districts in 2016.

### Public Service Commission

Mr. Randy Christmann, Chairman, Public Service Commission, presented information ([Appendix D](#)) regarding the state's regulatory environment for wind turbines and wind farms. He said the process for energy conversion and transmission facility siting is similar for all energy sources and includes an application, review by staff, a public hearing, commission approval, and post-construction inspection. He said the Administrative Rules Committee approved rule changes proposed by the Public Service Commission that will ensure proper decommissioning of wind turbines. He said the new rules clarify definitions, require commission approval of decommissioning plans, outline the timeframe for decommissioning, and require adequate financial assurances for decommissioning from the operator. He said regulatory costs related to wind turbine projects include an application fee and financial assurances for decommissioning. He said the application fee covers costs related to the case and is \$500 for each \$1 million of project cost up to a maximum fee of \$100,000. He said refunds are granted for any unexpended funds with most cases receiving a refund of \$50,000 to \$75,000.

In response to a question from Representative Koppelman, Mr. Christmann said financial assurances include surety bonds, an irrevocable letter of credit from a bank, a self-guarantee, or other guarantees acceptable to the commission.

### OIL WELL REFRACTURING STUDY

#### Department of Mineral Resources

Mr. Bruce Hicks, Assistant Director, Oil and Gas Division, Department of Mineral Resources, Industrial Commission, presented information ([Appendix E](#)) regarding the current status of oil and gas activity in the state. He said approximately 13,900 wells are active in the state resulting in oil production of approximately 1 million barrels per day. He said the department implemented rules on April 1, 2016, requiring perimeter berms on high-volume production sites to decrease the number of fluid spills that are not contained. He said the gas-to-oil ratio continues to increase as gas production increases, particularly in mature fields where reservoir pressures are starting to decrease. He said oil producers are researching enhanced oil recovery methods for use in mature fields, but none of the pilot projects have been economically successful. He said a 1 percent increase in oil recovery is estimated to produce an additional 3 billion barrels of oil. He said 40 oil wells are anticipated to be refractured in 2017 based on projects that have been reported. He said some oil wells may be refractured without being reported because companies may not be aware of the reporting requirements or may want to keep the results confidential.

In response to a question from Representative Porter, Mr. Hicks said the department does not require unitization or enhanced oil recovery methods in mature oil fields, but oil producers are planning to implement enhanced oil recovery when they find an economically feasible solution.

#### North Dakota Pipeline Authority

Mr. Justin Kringstad, Director, North Dakota Pipeline Authority, presented information ([Appendix F](#)) regarding oil price and production trends and the potential changes in oil production related to oil well refracturing. He said the number of new oil wells drilled per month is anticipated to range from 60 to 85 during the 2017-19 biennium depending on the price of oil. He said prior to the completion of the Dakota Access Pipeline, the price of a barrel of North Dakota oil was discounted from the West Texas Intermediate price by \$6 to \$8 related to transportation costs. He said the completion of the pipeline is anticipated to reduce the discount by \$1 to \$2, resulting in a corresponding increase in the proceeds received by producers when a barrel of North Dakota oil is sold. He said average daily oil production could reach 2 million barrels per day by 2035 using existing technology. He said average daily oil production could surpass 2 million barrels per day with oil well refracturing and other enhanced oil recovery methods.

Mr. Kringstad said oil production increased by an average of 25 percent and gas production increased by an average of 100 percent based on available data for oil well refractures in North Dakota. He said the success of the refracture may be affected by the age of the well, the location of the well, and the fracturing methods previously used on the well. He said refracturing can produce an estimated 200,000 barrels of incremental oil per well. He said approximately 2,000 wells may be candidates for refracturing. He said the breakeven price for refracturing depends on the estimated incremental oil production and the cost of the refracturing process, but may be feasible with oil prices averaging \$40 per barrel, \$2 million in refracturing costs, and 200,000 barrels of incremental oil production.

#### Marathon Oil Corporation

Mr. Jeff Parker, Operations Manager, Marathon Oil Corporation, said Marathon Oil Corporation has operations in four oil basins in the United States, including the Eagle Ford in Texas and the Bakken Formation in North Dakota. He said Marathon Oil Corporation stopped operating all of the company's drilling rigs and fracturing operations in the Bakken Formation in 2015 after oil prices decreased. He said Marathon Oil Corporation gradually restored operations as oil prices improved with five drilling rigs and four fracturing crews operating in the Bakken Formation in July 2017. He said high demand for fracturing crews is increasing wages resulting in a significant increase in the cost to fracture an oil well.

Mr. Peter Lewis, Advanced Senior Completions Engineer, Marathon Oil Corporation, presented information ([Appendix G](#)) regarding the process to refracture oil wells. He said refracturing is currently being utilized with oil wells that were originally completed between 2006 and 2009 as open-hole single stage fractures. He said after selecting the candidate well and securing investment approval, a workover rig cleans out the well bore and installs a new cement liner, which is followed by a fracturing crew that stimulates the well with an estimated 5.5 million pounds of proppant and 110,000 barrels of water. He said Marathon Oil Corporation and other oil companies are researching potential methods to refracture oil wells originally completed between 2009 and 2011, which had less than 20 stage fractures. He said the process to refracture oil wells originally completed between 2009 and 2011 will be more complicated because the original well bore contains a cement liner leaving only 4.5 inches for new equipment and materials. He said refracturing could be completed with one of the following three options:

- A flush joint lateral liner to accommodate plug and perforation stimulation techniques, which provides more versatility, but a high cost for specialty pipe;
- A flush joint lateral liner with a slim-hole ball and seat system, which uses known technology but may be limited to wells with shorter laterals; or
- A particulate diverter using the existing lateral liner, which is the least expensive option but provides the least accuracy for directing the fractures.

Mr. Lewis said the economics of refracturing an oil well are uncertain because the return on investment depends on the amount of additional oil that can be extracted from the oil well. He said the oil wells that were originally completed between 2006 and 2009 currently have a high return on investment because these wells have more remaining hydrocarbons than the oil wells completed after 2009. He said challenges for refracturing include the cost of the technology, future operational risk associated with decreasing the diameter of the well bore, loss of production from the well while the refracturing process is being completed, geological uncertainty, and the economic competitiveness compared to other oil wells.

### **North Dakota Petroleum Council**

Mr. Ron Ness, President, North Dakota Petroleum Council, provided a summary of oil well refracturing. He said North Dakota was the primary location for investing and developing new oil shale technology until the oil prices decreased in 2015. He suggested the Legislative Assembly continue to support the funding for oil and gas research to retain and attract oil development activity in the state. He said refracturing oil wells that were originally completed between 2006 and 2009 is economically successful and may not need tax incentives. He said refracturing oil wells that were originally completed between 2009 and 2011 may need tax incentives to offset the risks and to encourage economic development. He said the state could receive approximately \$1 million in tax revenue over the life of each oil well that is refractured, assuming 200,000 barrels of incremental oil and an oil price of \$40 per barrel. He said of the \$1 million, \$800,000 is related to revenue collections from the oil extraction tax and the oil and gas gross production tax, and \$200,000 is related to sales and use tax revenue collections.

In response to a question from Senator Piepkorn, Mr. Ness said oil companies would cease operations if the state imposed requirements to extract a certain percentage of the estimated oil in place, particularly if the requirements exceeded existing technological capabilities.

### **OTHER**

Chairman Wardner said the committee will meet in Tioga on Wednesday, September 6, 2017, for tours of oil production facilities, and in Williston on Thursday, September 7, 2017, to receive information related to the committee's study of the oil and gas tax allocations to hub cities. He said the committee will meet in Bismarck on Monday and Tuesday, October 9-10, 2017. He said the Great Plains and EmPower Energy Conference will be held in Bismarck on October 10, 2017.

No further business appearing, Chairman Wardner adjourned the meeting at 2:45 p.m.

---

Adam Mathiak  
Fiscal Analyst

ATTACH:7