

NORTH DAKOTA LEGISLATIVE MANAGEMENT

Minutes of the

ENERGY DEVELOPMENT AND TRANSMISSION COMMITTEE

Tuesday, August 28, 2012

Lewis and Clark/Maximilian/Stevens Rooms

Energy and Environmental Research Center, University of North Dakota
Grand Forks, North Dakota

Senator Rich Wardner, Chairman, called the meeting to order at 8:30 a.m.

Members present: Senators Rich Wardner, John M. Andrist, Lonnie J. Laffen, Stanley W. Lyson, Ryan M. Taylor, John Warner; Representatives Michael D. Brandenburg, Shirley Meyer, Todd Porter, Mike Schatz, Gary R. Sukut

Member absent: Representative Scot Kelsh

Others present: Connie Triplett, State Senator, Grand Forks

Stacey Dahl, State Representative, Grand Forks

Curtiss Kreun, State Representative, Grand Forks

Senator Ray Holmberg, member of the Legislative Management, was also in attendance.

See [Appendix A](#) for additional persons present.

It was moved by Senator Warner, seconded by Representative Sukut, and carried on a voice vote that the minutes of the July 26, 2012, meeting be approved as distributed.

ENERGY STUDY

Dr. Gerald H. Groenewold, Director, Energy and Environmental Research Center, gave a presentation ([Appendix B](#)) entitled *The Evolution of the EERC's Energy and Environmental Programs and Global, National, and Regional Perspectives, Challenges, and Opportunities*. He said historically the Energy and Environmental Research Center (EERC) has not received money from the University of North Dakota. He said this year there will be some money for program development. He said the university received \$1.62 million last year from the EERC. He said the EERC is not an academic enterprise. He said the United States cannot be energy independent soon but can be energy secure. He said the EERC does not do any nuclear work and does a little work on solar and wind power. He said the rare earth elements used in solar panels create environmental issues. He said a major area of study is carbon capture and storage.

In response to a question from Senator Wardner, Dr. Groenewold said the foundation pays 30 percent of the net to inventors for inventions at the EERC.

In response to a question from Senator Andrist, Dr. Groenewold said there is a lack of direction as to energy policy at the federal level. He said in the past there have been earmarks. He said earmarks provide state or federal money as leverage. He said this

makes industry comfortable because the money means policymakers support the work.

Dr. Groenewold said North Dakota lignite is dependent on Lake Sakakawea and power plants near the source of the lignite. He said lignite may not be shipped because of the high water content, the high sulfur content, and the low BTUs.

In response to a question from Senator Wardner, Dr. Groenewold said coal beneficiation helps with efficiency but does not help with shipping. He said after coal beneficiation the water content is reduced, but this makes the coal highly reactive. He said this creates problems in shipping.

Dr. Groenewold said coal needs to interplay with other energy forms. He said the energy sectors need to work together. He said this country is awash in natural gas, and this creates a problem with coal. He said with the Bakken play there is even more natural gas in this area of the country. He said Bakken oil is high-end oil, is tight oil, and has lots of natural gas.

Mr. John A. Harju, Associate Director for Research, Energy and Environmental Research Center, answered questions for the committee. In response to a question from Senator Wardner, Mr. Harju said eastern shale in Colorado is similar to North Dakota shale. He said western shale in Colorado is high in sulfur and metals.

Dr. Groenewold said oil companies are working to capture gas in North Dakota but due to short lease terms have to drill for oil immediately. He said the amount of natural gas in the Bakken Formation is a surprise but is small in amount in relation to other natural gas formations around the country.

In response to a question from Representative Meyer, Mr. Harju said there is sporadic sour gas in the Bakken. He said he has done research to find the cause. He said most of the gas is sweet gas.

In response to a question from Representative Meyer, Mr. Harju said he has focused work on the mechanisms of induce souring, including biotically and abiotically. He said there are a number of mechanisms, and the data does not support that it is a natural phenomenon with depletion.

Dr. Groenewold said not much is happening with wind because of the expiration of the federal production tax credit. He said in other parts of the country wind farms have brought down the price of farmland by 10 percent because of the difficulty in

farming around wind towers. He said there are opportunities with biomass through integration with other energies. He said liquid petroleum imports have reduced from 57 percent to the mid-40 percent of liquid petroleum used in the United States. He said for energy independence, there needs to be energy policy set by the Environmental Protection Agency (EPA) and the federal government. He said at present environmental disputes are settled by the courts. He said there needs to be infrastructure for the energy so that oil does not compete with grain for railcars.

Dr. Groenewold said one billion barrels could be added in non-Bakken oil in this state through enhanced oil recovery with carbon dioxide. He said the EERC is working on using carbon dioxide for enhanced oil recovery in the Bakken. He said one difficulty is there is not enough carbon dioxide; however, pipelines are being built.

In response to a question from Representative Meyer, Mr. Harju said he is aware of two field experiments in the Williston Basin using carbon dioxide to enhance oil recovery.

In response to a question from Senator Taylor, Dr. Groenewold said there has been a lot of talk about using natural gas generators as backup for wind, but there has not been much action.

In response to a question from Senator Warner, Dr. Groenewold said investors are skittish on investing in chemical and fertilizer plants because they are very expensive. He said these plants are dependent on cheap gas.

In response to a question from Senator Wardner, Dr. Groenewold said partnerships and synergies that are needed are happening at Blue Flint, Coal Creek, and Great River Energy. He said he has great respect for what Great River Energy is doing with malting barley and ethanol.

In response to a question from Senator Andrist, Dr. Groenewold said 40 percent of all corn is being turned into ethanol. He said a renewable standard that requires more cellulosic ethanol will help with using corn for fuel instead of food. He said there is drought in the Corn Belt, and the normal bushel return of 240 bushels to 260 bushels per acre is down to 120 bushels per acre. He said future growth of ethanol is dependent on many variables; however, ethanol has a future as part of the portfolio of energy used in this country.

In response to a question from Senator Warner, Dr. Groenewold said the leading work on using algae for ethanol has been done at the EERC. He said a 100 percent clone for fuel has been created out of ethanol produced from algae at the EERC. He said the largest challenge for ethanol from algae in North Dakota is finding a reliable source of algae. He said the use of genetically modified algae for ethanol scares him because algae produce most of the oxygen on earth. He said there are over 50,000 varieties of naturally occurring algae, and these

should be investigated first. He said the work on algae was funded by the Department of Defense.

In response to a question from Representative Brandenburg, Dr. Groenewold said this country needs a Secretary of Energy that is well-versed in energy. He said an energy policy needs to be practical.

In response to a question from Representative Brandenburg, Dr. Groenewold said the best people to regulate this state live in this state. He said this state has a model regulatory system. He said part of the reason for this is this state was late in oil development and could learn from other states. He said state agencies that regulate oil and gas need more staff.

In response to a question from Senator Wardner, Dr. Groenewold said the EERC learns from the past but focuses on the future.

Mr. Harju gave a presentation ([Appendix C](#)) entitled *Associated Gas in the Bakken Formation - Attendant Challenges and Opportunities*. He said there needs to be more pipelines and natural gas-processing facilities. He said the Btu value is extremely high for Bakken natural gas. He said the EERC has been studying bifuel technology in which natural gas is injected into the fuel stream of a petroleum engine. He said the EERC has achieved 40 percent or greater replacement rates in the study. He said a field demonstration has started two weeks ago.

In response to a question from Senator Wardner, Mr. Harju said the cost-savings of using natural gas from a Bakken well with bifuel technology is enormous. He said there is a \$3,000 to \$10,000 per day cost avoidance in diesel use. He said the payout is achieved after one and one-half months to three months.

In response to a question from Senator Warner, Mr. Harju said a part of the study is to determine the degree of conditioning that is required to optimize performance.

In response to a question from Senator Andrist, Mr. Harju said the technology could work in any application; however, there are logistical challenges. He said if there is a great demand, the logistics are easier. He said technology will gravitate to multipad locations with nearby gas.

In response to a question from Senator Warner, Mr. Harju said drilling rigs run on electric power. He said the diesel fuel is used to make electricity.

In response to a question from Senator Warner, Mr. Harju said there are opportunities to use excess energy in the electrical grid.

In response to a question from Representative Sukut, Mr. Harju said the conditioning unit that removes natural gas liquids and compresses the gas is located on the rig. He said all of the gas conditioning is done on location in the demonstration project.

Mr. Harju said value-added activities tend to be near the source of consumption in this country. Fertilizer plants require huge capital, and the cost of gas is as important as many other factors. He said

with the bifuel technology the opportunity for the technology ends once the gas gets to a plant. He said the technology needs to be by the well and scalable.

In response to a question from Senator Andrist, Mr. Harju said using gas from the well will need to have as little conditioning as possible due to economics.

In response to a question from Senator Laffen, Mr. Harju said the main opportunity is when the drilling rig is on the pad and the opportunity remains with pumping units; however, pumping units have modest consumption.

In response to a question from Representative Brandenburg, Mr. Harju said using gas that is being flared may or may not be economical, depending upon many factors. He said over half the wells flare less than 1,000 cubic feet (MCF) per day. He said it would never be economical to do anything with these wells because the well is flaring \$3 of gas per day--approximately \$1,000 of gas per year. He said there is more opportunity with higher levels of gas. He said there is a window of opportunity for wells that are releasing 300 MCF per day to 1,000 MCF per day. He said if the well is producing more gas than 1,000 MCF per day, the gas should be piped to a gas plant.

In response to a question from Senator Warner, Senator Wardner said flared gas is not taxed, and gas is taxed when placed in a pipeline. Senator Warner said the committee should be informed as to the tax consequences of using otherwise flared gas at the well site.

In response to a question from Representative Schatz, Mr. Harju said he is aware of some local power generation used by otherwise flared gas. He said this is done by Blaze Energy. He said it is useful when a producer wants to satisfy local needs like pumping water. He said this technology is used when there is a demand center.

In response to a question from Representative Meyer, Mr. Harju said his study was more of a technical assessment than an economic assessment. He said the price of natural gas was not factored into the study, but he is aware of pricing fluctuations. He said the higher value of natural gas liquids creates an incentive to get natural gas to a processing plant. He said there is a disparity in the market between oil and natural gas in price. He said natural gas liquids tend to follow oil pricing. He said because of this price disparity, flaring is wasting a low amount of dollars when compared to the dollars produced from oil and gas development.

Mr. Harju gave a presentation ([Appendix D](#)) entitled *CO₂ Capture, Utilization, and Storage - Enabling Technology for Coal*. He said 65 percent of carbon dioxide is from stationary power generation. He said because of this, coal is endangered by carbon dioxide regulation. He said the EPA greenhouse gas regulations preclude coal from use for power generation from new plants. He said the Plains CO₂ Reduction Partnership (PCOR) has three projects. He

said for the projects to be economical, carbon dioxide needs to be priced between \$30 to \$40 per ton and oil needs to be at least \$100 per barrel. He said technology needs to be developed to bring the cost down on carbon capture from coal plants. He said it takes approximately 30 percent of the power from the power plant to capture the carbon dioxide. He said new plant installations of air stripping units using solvents are approaching economic viability.

In response to a question from Senator Wardner, Mr. Harju said due to current federal regulations, the most viable use of lignite coal in a new plant is gasification. He said hydrogen could be made, but more hydrogen needs to be used in the market.

Mr. Harju gave a presentation ([Appendix E](#)) entitled *The EERC's CO₂ Enhanced Bakken Recovery Research Program*. He said he does not believe a waterflood will work in the Bakken Formation for secondary recovery because it pushes oil into the rock. He said two tests have been done but have been marginally effective using carbon dioxide. He said there needs to be a viable implementation approach. He said the conventional carbon dioxide method cannot be used.

In response to a question from Senator Wardner, Mr. Harju said the primary focal points are modeling and simulation. He said a classical secondary system has an injection well in the center and producer wells on the periphery and looks like a No. 5 die. He said Bakken wells are different from typical vertical wells, and he does not expect using an existing well bore for carbon dioxide injection.

Mr. Ed Murphy, State Geologist, and Ms. Julie LeFever, Core Library Manager, provided a tour of the Wilson M. Laird Core and Sample Library. Ms. LeFever said the Bakken play would not have happened without the core library. She provided information ([Appendix F](#)) as part of the tour.

BILL DRAFT ON EXEMPTION FROM OIL EXTRACTION TAX FOR REFINERIES IN THIS STATE

Committee Counsel presented a bill draft [[13.0137.01000](#)] on exempting oil from the oil extraction tax if the oil is sold to and refined by a refinery located in this state. He said the idea for the bill draft came from the testimony of Mr. Mel Falcon, and the bill draft was requested by Representative Meyer at the last meeting.

Representative Meyer said there are three refineries being considered for construction in this state, and the bill draft would help the lower price of oil purchased by these refineries.

In response to a question from Senator Warner, Representative Meyer said the bill draft would help with oil being stored at the well site by providing a market.

Senator Wardner said the bill draft may need language to require a discount in price for the reduction in taxes.

Representative Porter said a 60,000-barrel per day refinery purchasing \$60 per barrel oil would have a savings of \$234,000 per day.

BILL DRAFT TO ALLOW THE NORTH DAKOTA PIPELINE AUTHORITY TO BOND FOR REFINERIES

Committee Counsel presented a bill draft [\[13.0136.01000\]](#) that would allow the North Dakota Pipeline Authority to issue evidences of indebtedness for refineries.

BILL DRAFT TO PROVIDE FUNDING FOR THE RENEWABLE ENERGY FUND AND TO CONDUCT A STUDY OF VALUE-ADDED MARKET OPPORTUNITIES FOR RENEWABLE ENERGY RESOURCES

Committee Counsel presented a bill draft [\[13.0152.01000\]](#) to take 5 percent, up to \$3 million per biennium, of the amount credited to the resources trust fund from the oil extraction tax development fund and place it in the renewable energy development fund. He said the bill draft provided a general fund appropriation of \$300,000 to the Department of Commerce to study value-added market opportunities relating to renewable energy resources.

Mr. Alan Anderson, Commissioner, Department of Commerce, provided testimony on the bill draft. He said the main focus of the EmPower Commission was on research and development. He said oil and gas and lignite have permanent funding, and this bill draft would provide for the same permanent funding for renewable energy.

In response to a question from Senator Warner, Mr. Anderson said traditionally the renewable energy development fund has been funded in the amount of \$3 million. He said private dollar match is needed to use the money in that fund. He said the Renewable Energy Council votes based upon criteria from experts as to the priorities of projects. The recommendations are then sent to the Industrial Commission for a final vote.

In response to a question from Representative Porter, Mr. Anderson said anytime there is a public and private partnership there is due diligence because of the matching funds from industry.

Mr. Anderson said the EmPower Commission supports water projects from the resources trust fund, but the forecast is for in excess of \$300 million in that fund, and 1 percent for renewable energy projects does not seem like too much from that fund.

BILL DRAFT FOR APPROPRIATION FOR EMPLOYMENT DATA

Committee Counsel presented a bill draft [\[13.0157.01000\]](#) to provide a general fund appropriation of \$100,000 to Job Service North Dakota for the purpose of upgrading collection and

use of employment data to identify transportation employees and other employees who should be included for statistical purposes in oil-related and gas-related employment.

Mr. Anderson said these statistics are important for impact funding. He said transportation is not tied to oil and gas statistics and some transportation is solely or mainly for oil and gas. He said this is one-time funding, and he expects that in five or more years there will be need for \$15,000 to \$20,000 to update.

In response to a question from Representative Meyer, Mr. Anderson said a transportation company or construction company may or may not be tied to oil and gas. He said some of these transportation and construction employees work in the oil and gas industry and should be included under the mining heading for statistical purposes.

In response to a question from Senator Laffen, Mr. Anderson said statistics would not provide more net money to cities and counties but will distribute the money more accurately.

In response to a question from Representative Sukut, Mr. Anderson said housing construction for oil and gas employees will not be included. He said there is some subjectivity by Job Service North Dakota in determining whether an employee is oil-related and gas-related. For example, he said, a construction company that builds well pads would be included within the oil-related and gas-related employment statistics.

In response to a question from Senator Wardner, Mr. Anderson said these statistics will be good for counties and cities.

BILL DRAFT FOR FUNDING TO OIL AND GAS RESEARCH FUND AND FOR STUDY OF VALUE-ADDED MARKET OPPORTUNITIES RELATED TO OIL AND GAS

Committee Counsel presented a bill draft [\[13.0158.01000\]](#) to provide an additional \$1 million per biennium for a total of \$5 million to the oil and gas research fund. He said the bill draft provides a general fund appropriation of \$300,000 to the Department of Commerce for the purpose of studying value-added market opportunities related to oil and gas. He said the bill draft contains legislative intent that the additional \$1 million in the oil and gas research fund be used by the Industrial Commission for opportunities related to value-added processing of oil and gas.

Mr. Anderson said the bill draft is similar to the bill draft for renewable energy. He said the oil and gas research fund is increased by \$1 million, and the \$1 million is meant for value-added projects. He said as a result of the BENTEK study, it is now known that unless there is increased pressure there will be more and more gas in a Bakken well. He said the study is needed to provide market opportunities for this gas.

In response to a question from Representative Warner, Mr. Anderson said proppants would be included within the studies that may be funded by the oil and gas research fund.

LEGISLATIVE PROPOSAL FOR EXPANSION OF THE HOUSING INCENTIVE FUND AND TAX CREDIT

Mr. Anderson said the legislative proposal ([Appendix G](#)) is a work in progress. He said the proposal allows the Industrial Commission to enter a public and private partnership and reserve a share of the facilities for the private partner. He said the bill draft removes the sunset clause and broadens the program. He said the tax credit level is doubled from \$15 million to \$30 million. He said more flexibility is provided to the Housing Finance Agency. He said the Housing Finance Agency can charge developer fees instead of taking administrative costs from the fund.

In response to a question from Senator Wardner, Mr. Anderson said affordable housing is the premier issue in oil country. He said oil and gas development has increased rents in areas outside oil development areas.

In response to a question from Senator Taylor, Mr. Anderson said one of the challenges of the fund is that most of the money comes at the end of the year when people are thinking about taxes. He said the public and private partnership portion of the proposal would provide incentives to companies to build housing for employees.

In response to a question from Senator Taylor, Mr. Anderson said the changes in allowing persons with low-income or moderate-income instead of with incomes not more than 50 percent of the area median income provides more flexibility in the program.

In response to a question from Representative Meyer, Mr. Anderson said the changes in the proposal will allow others to pay for the administration instead of the costs coming from the fund.

In response to a question from Representative Brandenburg, Mr. Anderson said the tax credit allows for taxes to be dedicated to this fund at no cost.

In response to a question from Representative Sukut, Mr. Anderson said all of the money in the fund except for \$1 million is committed. He said the limitation is in the funding not in the number of projects. He said because of this proposal more companies will be involved.

In response to a question from Senator Warner, Mr. Anderson said the main builder of homes is Lutheran Social Services.

Senator Wardner said there is a concern that by paying off the loan or selling the property the person can be relieved of the duty to rent to low-income and moderate-income individuals.

In response to a question from Representative Meyer, Mr. Anderson said the developers of these projects take money from many different sources, including the United States Department of Agriculture, so there are many different requirements.

Senator Wardner said there needs to be housing for people working in retail and service jobs.

No further business appearing, Chairman Wardner adjourned the meeting at 3:15 p.m.

Timothy J. Dawson
Committee Counsel

ATTACH:7