

## NORTH DAKOTA LEGISLATIVE MANAGEMENT

### Minutes of the

## **ENERGY DEVELOPMENT AND TRANSMISSION COMMITTEE**

Thursday, October 16, 2014

East Discover Hall, 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, Philip M. Murphy, Connie Triplett; Representatives Chuck Damschen, Ben W. Hanson, Todd Porter, Mike Schatz, Peter F. Silbernagel

**Members absent:** Senators John Andrist, Kelly M. Armstrong, David Hogue; Representative Tracy Boe

**Others present:** Lois Delmore, State Representative, Grand Forks  
Mark Sanford, 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 Representative Silbernagel, seconded by Representative Schatz, and carried on a voice vote that the minutes of the September 17, 2014, meeting be approved as distributed.**

### **ENERGY AND ENVIRONMENTAL RESEARCH CENTER**

Mr. Thomas A. Erickson, Interim Director, Energy and Environmental Research Center, gave a presentation ([Appendix B](#)) on the evolution and current status of the Energy and Environmental Research Center (EERC). He said the loss of federal earmarks in 2010 resulted in the loss of contract awards. He said there has been a reduction from 2010 of almost \$45 million in awards to around \$25 million today. He said EERC has \$1.6 million dollars in debt and said EERC needs to grow out of debt. He said EERC has reduced focus on vision and has shifted to demonstration capabilities to make money. He said EERC should focus more on vision and this would be a great benefit to the state.

Mr. Erickson said the coal industry is in the wait-and-see mode and there needs to be more movement. He said there needs to be a new coal plant built. He said coal saves lives and is good for humanity.

In response to a question from Representative Hanson, Mr. Erickson said the \$1.6 million EERC debt is held by the University of North Dakota. He said the University is acting as a bank and floating EERC. He said there has not been discussion of interest because those details have not been worked out. He said a three-year plan will be presented on the day following the meeting.

In response to a question from Senator Triplett, Mr. Erickson said the employees of EERC have not been part of the state budget in the past and the EERC has been self-sustaining. He said in the past most everything done by EERC was done through funding that was brought in by EERC.

In response to a question from Senator Triplett, Mr. Erickson said the focus is not on changing the model and having the state take care of EERC. He said the state needs EERC for leadership and EERC is presently focused on finding industry funding.

In response to a question from Senator Triplett, Mr. Erickson said the drop in federal earmarks was from \$14 million to nothing. He said EERC still receives competitive funding from federal agencies.

In response to a question from Senator Triplett, Mr. Erickson said EERC formed a foundation in 1992 for the commercialization of intellectual property. He said the foundation creates funding for EERC and funds patented work.

In response to a question from Senator Triplett, Mr. Erickson said EERC is fatigued with opportunity that does not come with money. He said EERC needs to get ahead of issues like oil conditioning and provide scientific data.

In response to a question from Chairman Wardner, Mr. Erickson said the model in which funding is provided through a governmental entity has worked well in the past to fund activities that provide vision. He said it creates experts that are out ahead of the issues. He said this vision could identify critical needs in this state that require intervention. He said this is how the mercury control research started.

In response to a question from Chairman Wardner, Mr. Erickson said one example of visionary work would be to do advanced characterization for oil stabilization. He said this would be better than the routine work that is being done.

Chairman Wardner said energy is an enormous part of the state's economy and the state needs to be thinking ahead. He said EERC may need state money to have the freedom to address these issues.

In response to a question from Representative Silbernagel, Mr. Erickson said no money from the foundation has gone to fund EERC activities. He said the money has been used to protect over \$1 million in intellectual property. He said \$300,000 to \$400,000 per year goes to the inventor and to protect intellectual property.

Mr. John Harju, Associate Director for Research, Energy and Environmental Research Center, gave presentations on the Bakken Production and Optimization Program ([Appendix C](#)), Changing Paradigms in Carbon Dioxide Enhanced Oil Recovery ([Appendix D](#)), and the Energy Polygeneration Industrial Complex ([Appendix E](#)).

Mr. Harju said EERC hopes to have a contract with the Department of Energy for the characterization of oil. He said typical analysis is simplistic and compliance based. He said no one knows the individual chemicals in the Bakken Formation crude oil. He said an advanced characterization could lead to innovation and discovery. Advanced characterization is the kind of work at which the EERC excels. He said there is a difference between stabilization and conditioning. He said stabilization is very expensive and is used to take off the natural gas liquids. He said conditioning can be done at the wellhead.

Mr. Harju said the Bakken Production Optimization Program is to find more oil with less of an environmental footprint from the Bakken Formation. He said the last drop of oil is not taken from the Bakken Formation not because of technology, but because of cost.

Mr. Harju discussed flaring and provided a handout ([Appendix F](#)) on flaring. He said there are 5,000 locations flaring gas, but 60 percent of the gas flared comes from 230 locations that flare greater than 300 mcf per day. He said if the solutions to flaring focus on the 230 locations, there will be great changes in the utilization curves. He said low-ball estimates for pipelines lead to flaring because the infrastructure is not made big enough. He said there needs to be good resource assessment to get the proper capital investment. He said the Industrial Commission order on flaring created the following flare capture targets:

October 1, 2014 - 74 percent capture (26 percent flaring)

January 1, 2015 - 77 percent capture (23 percent flaring)

January 1, 2016 - 85 percent capture (15 percent flaring)

January 1, 2020 - 90 percent capture (10 percent flaring)

He said the order requires a gas capture plan with all applications for a permit to drill after June 1, 2014. He said all infield wells may produce at the maximum efficient recovery for 90 days. He said if capture targets are not met, production restrictions are put in place. He said the production restrictions are 200 barrels per day, provided 60 percent of monthly produced gas is captured, and 100 barrels per day, if capture is below 60 percent of monthly produced gas.

In response to a question from Senator Murphy, Mr. Harju said today there is greater opportunity for orderly development and greater capture rates because the oil play has changed into a harvesting mode.

Representative Porter said he takes issue with using flaring rates that include flaring on tribal lands. He said the state does not control oil development on tribal lands.

In response to a question from Representative Porter, Mr. Harju said wells on the Fort Berthold Reservation have considerably higher flaring rates than elsewhere in the state.

Mr. Harju said compression and chillers are costly and may not be good at every site to achieve the capture target rates. He said these methods may be good at an undersized line. He said there is great promise with absorbent technology. He said it is not mechanical and requires absorption towers. He said it needs to be tested in

a relevant environment. He said EERC has looked at about 50 technologies and most are twists on recovering liquids or turning natural gas into liquids. He said there need to be more pipelines to reduce flaring.

In response to a question from Representative Silbernagel, Mr. Harju said one scientist works approximately 70 percent of the time with support from other people on the flaring reduction technology. He said EERC works with a task leader, who has support from across EERC.

Mr. Harju reviewed waste management work at EERC. He said the program focuses on drill cuttings, recycling, and naturally occurring radioactive material (NORM). He provided a handout ([Appendix G](#)) on NORM.

In response to a question from Chairman Wardner, Mr. Harju said the beneficial uses of recycled cuttings include flowable fill/controlled low-strength material used for drill pads, temporary roads, road base, and trench filling for pipelines and utilities. Other beneficial uses include fill material, road salt, and road-based additives.

Mr. David Johnson, Director, Novera Total Environmental Management Systems, provided information to the committee. He said Novera has started construction of a drill cuttings recycling facility. He said the cuttings are fine and not like aggregate. He said they do not produce high-strength concrete. He said they are environmentally safe and his company is working with contractors to mix the recycled cuttings into products. He said his company is 30 days away from opening and doing a full-scale test. He said his company hopes to be open for business in the first quarter of 2015.

In response to a question from Chairman Wardner, Mr. Johnson said the operator will place the drill cuttings in a catch basin and his company will suck up the waste and haul it to a separate site. He said this will not necessarily increase trucking because it will decrease loads to the site.

In response to a question from Chairman Wardner, Mr. Johnson said the technology used is basic technology that is widespread.

Mr. Harju discussed the waste management program and provided a handout ([Appendix H](#)) on water. He said the use of freshwater for a well has gone up five fold. He said the EERC program focuses on microbiological factors that cause corrosion. He said current trends include slick water fracturing instead of gelled fracturing. He said it requires more water with twice the pump rate and twice the volume. He said with slick water fracturing it is more likely that the produced water will be reused. He said this could reduce freshwater use.

In response to a question from Senator Murphy, Mr. Harju said the spill remediation and land remediation programs have been developed in conjunction with North Dakota State University scientists.

In response to a question from Chairman Wardner, Mr. Harju said the demonstration programs will begin with next years' growing season.

In response to a question from Senator Triplett, Mr. Harju said prevention is an element of the project. He said EERC is looking at monitoring technologies and evaluating pipeline materials. He said this study is being done for the Industrial Commission and there may be some results by February.

Mr. Harju gave a presentation on changing paradigms in carbon dioxide enhanced oil recovery. He said EERC is looking for basins that are carbon dioxide amenable to enhanced oil recovery. He said EERC is studying nanopores in the Bakken Formation for recovery. He said this kind of rock is usually used as a seal in tertiary recovery. He said the goal is to lessen the production decline. He said recovery in the Bakken Formation will go from primary recovery directly to tertiary because a water flood does not work well.

In response to a question from Senator Triplett, Mr. Harju said there is always concern that present activity will damage future recovery. He said this is based on prior wisdom but the industry has learned much over time. He said there is no data that says the Bakken Formation is being irresponsibly developed.

In response to a question from Senator Triplett, Mr. Harju said although learning is continuous and this issue is a concern, there is no data to confirm or refute that there is damage to the production of the Bakken Formation by current development.

Mr. Harju said oil companies are good at producing from macrofractures but not from the matrix and microfractures. He said carbon dioxide moves well through macrofractures but not through the matrix. He said oil is produced from benchmarks and not the shale. He said conservatively carbon dioxide can produce 4 billion to 7 billion barrels more oil and use 2 billion to 3.2 billion tons of carbon dioxide. He said all the power plants in the state of North Dakota produce 33 million tons of carbon dioxide per year.

In response to a question from Representative Silbernagel, Mr. Harju said EERC has recently entered into a contractual relationship with Alliance Techsystems, Inc. (ATK), regarding using dry explosives for fracturing. He said the challenge is that operators do not want to change a process that is already working. He said dry explosives have only been used on recompletions on poor wells. He said EERC is optimistic with the technology and will identify high-priority wells for which the technology will have a high success rate.

Mr. Harju gave a presentation on the Energy Polygeneration Industrial Complex (EPIC). He said the complex would use multiple feedstocks and produce multiple products. He said the complex would use coal, biomass, and gas conversion, for example.

He said the industry has a bigger concern with getting enough carbon dioxide than finding the technology to get more oil out with carbon dioxide. He said using natural gas to produce electricity is like washing dishes with good scotch. He said natural gas has the primary building blocks for plastics. He said natural gas is 40 percent efficient in producing electricity and natural gas is over 90 percent efficient in producing heat for a home. He said some biomass is competitive with coal.

### **CRUDE OIL AND NATURAL GAS EXPLORATION LANDFILLS BILL DRAFT**

Committee Counsel presented a bill draft [[15.0238.01000](#)] previously reviewed by the committee, which would remove the special election vote option of a county which could prohibit a permit for an oil and gas exploration landfill from being issued by the State Department of Health.

Chairman Wardner said there were 11 people in the audience in opposition to the bill draft.

Mr. Donald Longmuir, Emergency Management and Planning and Zoning, Mountrail County, provided testimony in opposition to the bill draft. He said his county's experience has not been favorable with state control. He said the state, through an Attorney General opinion, said the county has no jurisdiction over the zoning of a saltwater disposal well. He said the county was concerned with traffic. He said the jurisdiction was with the Industrial Commission and the Industrial Commission did not have jurisdiction over traffic. He said portable disposal sites are under the jurisdiction of the Industrial Commission. He said the sites have started on fire and what is in them is unknown. He said Mountrail County had a moratorium on special oilfield waste sites. He said there were three that were in the works. He said Mountrail County placed 26 items on the conditional use permit and two sites were approved. He said there should be local control for siting special oilfield waste sites.

Mr. Peter Wolla, Williams County, provided written testimony ([Appendix I](#)) in opposition to the bill draft. He said a countywide election has only been used once in Bowman County and the site was still approved. He said one site in Williams County was denied two times by the board of county commissioners. He said the major concern is the leachate pond.

Mr. Todd Leek, Member of the Dakota Resource Council, presented testimony against the bill draft. He said under Environmental Protection Agency (EPA) regulations, oilfield waste is not hazardous waste. He said it is not hazardous waste by law but is still hazardous by nature. He said he does not want unregulated hazardous waste landfills because they will sooner or later be abandoned and need to be cleaned up. He said he fears that other hazardous materials that are not exempt would end up in the landfill. He said Grand Forks County had a landfill process and picked a site and the township had a four day hearing and required an environmental impact statement. He said after the statement the landfill was scrapped. He said the liners are only a regulatory fulfillment and do not provide any containment. He said local control is needed because the local people are most concerned with the land.

Mr. Barry Ramberg, Williams County Commissioner, provided written testimony ([Appendix J](#)) against the bill draft. He said these types of landfills will not be an issue in the future because there is new technology that will recycle drill cuttings. He recommended keeping local control because the county is doing a good job of siting necessary landfills.

Mr. David Glatt, Chief, Environmental Health Section, State Department of Health, provided written testimony ([Appendix K](#)) on the process for a proposed landfill. He said every proposed landfill site must go through a preapplication process where the State Department of Health (DOH), State Geologist, and State Water Commission review proposed landfill locations for site suitability. He said once a site has been selected following the preapplication approval process there is public notice. He said the applicant must obtain county land use zoning approval before submitting a landfill permit application to the state. He said once DOH has completed a technical review of the landfill design, provided operational and closure plans, and after any outstanding issues, DOH will issue a notice for public comment and hearing. He said DOH may approve, approve with modifications, or deny the landfill permit after the public comment. He said if the permit has been approved by DOH, the county is

notified and has 60 days to hold a special election. He said there has only been one special election and the landfill passed the special election. He said the special election has not been a hindrance to location and ultimate permitting of landfills. He said a fully transparent public process has been critical in addressing public concerns and issues. He said oilfield waste disposed of at landfills is approximately 2 million tons per year. He said there are 11 landfills permitted for oilfield special waste. He said there is 55 million cubic yards of capacity, which is approximately 30 years of current generation capacity for these special landfills.

In response to a question from Representative Silbernagel, Mr. Glatt said several permits have not been approved in the preapplication process because the site was not suitable.

In response to a question from Representative Damschen, Mr. Glatt said townships have zoning authority, but most do not exercise it because landfill siting is too complex and technical.

In response to a question from Representative Porter, Mr. Glatt said a delay in permitting can occur because of issues with the preapplication process. He said sometimes the department does not receive timely responses. He said the county process takes time and so does the public input.

In response to a question from Chairman Wardner, Mr. Glatt said no one welcomes a landfill in their own backyard.

Chairman Wardner asked the committee's wishes on the bill draft and no motion was made.

### **Filter Socks**

Mr. Glatt said DOH is close to a draft regulation on the tracking of technologically naturally occurring radioactive material. He said the Oil and Gas Division requirement of receptacles for filter socks at sites has greatly reduced the problem. He said he is more concerned with pipe scale and sludge issues in the future. He said the standard for whether something is hazardous may be changed based upon an Argonne National Laboratory report. He said the change is close to being released for public comment.

### **Greenhouse Gas Regulation**

Mr. Glatt said EPA regulations for existing power plants were not that onerous for North Dakota. He said the challenge will be to get energy sources to work together to meet the carbon dioxide standard. He said other states need to use a regional plan but are concerned with giving up sovereignty. He said he is concerned that wind will not be able to be used to offset energy that produces carbon dioxide. He said the EPA rules will be litigated. He said the rules create reliability issues and cost issues.

### **Methane**

Mr. Glatt said natural gas is a side benefit of oil exploration. He said methane is accidentally released in the oilfield and is up to 40 times worse as a greenhouse gas than carbon dioxide. He said the EPA will regulate methane. He said DOH is trying to send the message to the industry that they will be fined if there are leaks. He said he wants the state to take care of the issues so the EPA does not.

### **EmPower**

Mr. Alan Anderson, Commissioner, Department of Commerce, presented information on the process of the EmPower North Dakota Commission. He said the process is open and inclusive and all meetings are open to the public and posted. He said initial meetings are on gathering information and move on to proposed solutions. He said experts are invited to present information. He said any legislative proposal from EmPower is a starting point and the proposal is turned into a bill draft by the Energy Development and Transmission Committee and then considered again in the legislative session.

Senator Triplett said she did not have issue with the process used by EmPower but wished the committee would have had more information.

## **SALES AND USE TAX EXEMPTION FOR FERTILIZER OR CHEMICAL PROCESSING FACILITY BILL DRAFT**

Committee Counsel presented a bill draft [[15.0240.02000](#)] on providing a sales and use tax exemption for tangible personal property used to construct a fertilizer or chemical processing facility. He said the bill draft was a change from the previous bill draft in that it provided for retroactive application back to the beginning of 2015.

Mr. Anderson said the change would allow CHS, Inc., to take full benefit of the exemption because CHS, Inc., wants to begin building a fertilizer plant this spring. He said the CHS, Inc., plant is the largest private investment in

the state to date. He said the plant will employ 160 to 180 workers and create fertilizer. He said this will link the agriculture and energy industries in this state.

**It was moved by Representative Schatz, seconded by Representative Silbernagel, and carried on a voice vote that the committee reconsider its actions to recommend the first draft of the bill draft [15.0240.01000] to create a sales and use tax exemption for tangible personal property used to construct a fertilizer or chemical processing facility to the Legislative Management.**

**It was moved by Representative Damschen, seconded by Representative Schatz, and carried on a roll call vote that the second draft of a bill draft [15.0240.02000] to create a sales and use tax exemption for tangible personal property used to construct a fertilizer or chemical processing facility be approved and recommended to the Legislative Management.** Senators Wardner and Murphy and Representatives Damschen, Hanson, Porter, Schatz, and Silbernagel voted "aye." Senator Triplett voted "nay."

Senator Triplett said she voted against the bill draft because there needs to be a middle ground in the motion as to whether the bill draft is approved or disapproved, or there needs to be a better hearing held by the committee.

Chairman Wardner said people can come and testify if they wish. He said even after invitation for public comment, many bill drafts are sent forward without public comment.

**It was moved by Representative Porter, seconded by Representative Hanson, and carried on a voice vote that the Chairman and the Legislative Council staff be requested to prepare a report and the bill drafts recommended by the committee and to present the report and the recommended bill drafts to the Legislative Management.**

**It was moved by Senator Murphy, seconded by Representative Silbernagel, and carried on a voice vote that the committee be adjourned sine die.**

No further business appearing, Chairman Wardner adjourned the meeting sine die at 2:30 p.m.

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Timothy J. Dawson  
Counsel

ATTACH:11