

NORTH DAKOTA LEGISLATIVE COUNCIL

Minutes of the

ENERGY DEVELOPMENT AND TRANSMISSION COMMITTEE

Monday, September 17, 2007

Days Inn

Dickinson State University

Dickinson, North Dakota

Red Trail Energy

Richardton, North Dakota

Chairman Rich Wardner called the meeting to order at 10:00 a.m.

Members present: Senators Rich Wardner, John M. Andrist, Robert M. Horne, Ryan M. Taylor; Representatives Wesley R. Belter, Matthew M. Klein, Shirley Meyer, Todd Porter, Dave Weiler

Members absent: Senators Ben Tollefson, Herbert Urlacher; Representative Scot Kelsh

Others present: Nancy Johnson, Francis J. Wald; State Representatives, Dickinson

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

It was moved by Representative Klein, seconded by Representative Porter, and carried on a voice vote that the minutes of the previous meeting be approved as distributed.

ENERGY STUDY

The committee toured Nabor oil drilling rig No. 688 north of Killdeer, then went to Dickinson State University and received testimony on oil production, natural gas processing, crude oil refining, transportation of oil and natural gas, and ethanol.

Mr. Terry Kovacevich, Operations Manager, Marathon Oil Company, presented testimony on the Bakken Play ([Appendix B](#)). He provided testimony on the history of oil drilling in the Bakken. He said the Bakken is 50 feet to 90 feet thick and drilling is done in the middle Bakken which is 30 feet to 70 feet thick. He said the rock is not porous or permeable and to produce oil, fractures have to be found or made in the rock. He said typical drilling in the Bakken is two miles down and two miles horizontal. He said fracturing is done by injecting sand and water under high pressure. He said it takes a week to set up for a fracture job that takes five hours to six hours. He said the workforce will require 3,000 people per year for the next four years.

In response to a question from Senator Andrist, Mr. Kovacevich said the major economic factor for high oil prices is world demand.

In response to a question from Representative Porter, Mr. Kovacevich said the tax incentives for the Bakken passed last legislative session were very positive and the effect of those incentives can be seen by the great increase in rig activity.

In response to a question from Senator Wardner, Mr. Kovacevich said the technology for directional control and fracturing have become better over time.

Mr. Rory D. Nelson, Manager, Amerada Hess Gas Plant, provided testimony on natural gas processing challenges ([Appendix C](#)). He said the Tioga Gas Plant was built in the early 1950s. He said the plant gathers gas from 500 wells. He said the fractionation train at the plant pulls out propane, butane, natural gas, sulfur, and crude oil. He said the plant averages 97 percent of capacity. He said the plant is looking at expanding and modernizing. He said the gas is transported from the plant by rail. He said the gas has to be moved to the plant by pipeline. Although the Bakken wells are ideal for natural gas processing, he said, a pipeline is \$100,000 to \$200,000 per mile and there needs to be a field of wells to justify the cost. He said Bakken wells tend to be isolated from one another.

In response to a question from Representative Klein, Mr. Nelson said it will cost approximately \$110 million to upgrade and modernize the plant.

In response to a question from Senator Andrist, Mr. Nelson said most gas plants in this state transport solid product by rail.

In response to a question from Senator Taylor, Mr. Nelson said a new plant would cost \$500 million to \$600 million.

Mr. Alan Anderson, Manager, Mandan Tesoro Refinery, provided testimony on crude oil and refined products movements ([Appendix D](#)). He said the refinery in Mandan is the only refinery in North Dakota. He said Tesoro's main business is refineries with seven refineries and 6,000 employees. He said Tesoro has less than 5 percent of the refining capacity of the United States. He provided maps of pipelines that provide crude to refineries and pipelines that provide transportation of refined product. He said the Mandan refinery is only for sweet crude. He said the crude oil from Bowman County is sour crude and does not work in large quantities for refining at Mandan. He said cokers allow a refinery to refine sour crude, e.g., crude oil from Canada. He said cokers are very expensive. He said it costs one cent per 100 miles of pipeline to move a gallon of finished product. He said it costs three cents per 100 miles of highway to move

a gallon of product by truck. He said the cost for railroads is somewhere in between the cost for pipelines and trucks. He said the number of refineries in the United States has reduced from 223 in 1985 to 144 in 2003. He said the number of refineries has reduced because the return on capital for investment is around 5 percent. He said during this time demand has gone up.

In response to a question from Representative Klein, the decrease in demand in 1992 was because of the recession.

In response to a question from Senator Taylor, Mr. Anderson said the Flint Hill and Marathon refineries in Minnesota are in shutdown. He said shutdown is a time for maintenance. He said this period usually lasts one month, and if done correctly in coordination with other refineries, the public should not see a difference in the price of refined products. He said the difficulty this year has been the floods in the southern United States.

In response to a question from Representative Belter, Mr. Anderson said the 10-year plan for the Mandan plant is a 15 percent expansion.

In response to a question from Representative Klein, Mr. Anderson said a shift from gasoline to diesel in the pipeline takes about one week.

In response to a question from Representative Porter, Mr. Anderson said the Tesoro Refinery is sized for the area. He said the refinery cannot compete with large refineries in Minnesota. He said there needs to be a crude pipeline to the southern United States from Canada.

In response to a question from Senator Taylor, Mr. Anderson said sweet crude may be refined in a plant with a coker; however, there is a \$10 to \$15 discount per barrel for sour crude and the cost for a coker is great. He said a refinery would not want to use sweet crude if it could refine sour crude because of the economics.

In response to a question from Senator Andrist, Mr. Anderson said sulfur is what makes crude oil sour.

In response to a question from Representative Meyer, Mr. Anderson said the Tesoro Refinery can use the same pipeline for all the products it produces.

Mr. Mark Makelky, Director, North Dakota Pipeline Authority, presented testimony on assessing crude oil and natural gas bottlenecks ([Appendix E](#)). He said nearly 35 percent of oil moves from the well by truck. He said the state does not have rail capacity to move oil. He said sour oil needs to be transported in special steel.

In response to a question from Senator Andrist, Mr. Makelky said pipeline capacity is increased by increasing pressure with a compensator for gas and by increasing pressure through a pump for oil.

In response to a question from Senator Taylor, Mr. Makelky said there are a limited number of railcars and there is competition for those cars. He said there is very little oil moved in the Midwest by rail. He said there is not the infrastructure to move oil by rail.

In response to a question from Senator Horne, Mr. Makelky said the Federal Energy Regulatory Commission has jurisdiction over multiple state pipelines.

Mr. Mark Erickson, Yellowstone Ethanol LLC, and Treasurer of the North Dakota Ethanol Producers Association, presented information on feedstock in the ethanol industry ([Appendix G](#)).

Mr. Mick Miller, General Manager, Red Trail Energy LLC, and Vice President of the North Dakota Ethanol Producers Association, presented information on production in the ethanol industry. Mr. Miller's testimony is included in [Appendix G](#).

Mr. Jeff Zuger, General Manager, Blue Flint Ethanol, and Secretary of the North Dakota Ethanol Producers Association, presented information on wholesale distribution. Mr. Zuger's testimony is included in [Appendix G](#).

In response to a question from Senator Wardner, Mr. Zuger said there are small local blenders like Farstad Oil, Inc., Rud Oil Company, and Cenex.

In response to a question from Representative Meyer, Mr. Zuger said it is not legal to use blender pumps unless labeled for flex-fuel vehicles only.

In response to a question from Representative Meyer, Mr. Zuger said the price of wetcake is based on the market fee value.

Mr. Randy M. Schneider, US BIO, and President of the North Dakota Ethanol Producers Association, presented information on marketing and retail issues in the ethanol industry. Mr. Schneider's testimony is included in [Appendix G](#).

In response to a question from Senator Wardner, Mr. Schneider said the incentive programs offered by the state made a large difference in locating in this state. He said the regulatory attitude in this state is positive because the State Department of Health and the State Water Commission attempt to fix problems instead of setting up roadblocks. He said there needs to be a federal program for pipeline infrastructure.

In response to a question from Representative Belter, Mr. Schneider said ethanol plants want to move the feedstock product as quickly and to a place as close as possible so that it does not have to be stored for a long time and does not need to be dried.

In response to a question from Representative Weiler, Mr. Schneider said the consumer discount for ethanol is not as much as first thought due to the pressures of the marketplace. Mr. Miller said producers make 10 cents to 15 cents per gallon profit and this profit is shrinking. He said the people that buy, blend, and transport the product to the station make the most money.

In response to a question from Senator Andrist, Mr. Miller said there are significant margins in growing corn. He said corn may drop in price to the high \$2 per bushel area but will generally remain in the low \$3 per bushel area.

In response to a question from Senator Andrist, Mr. Erickson said ethanol can be made out of corn or switchgrass in the same plant. He said there are

difficult logistics for making ethanol out of switchgrass because of the bale storage. He said making ethanol out of switchgrass on a commercial level is 5 years to 10 years away.

In response to a question from Senator Andrist, Mr. Schneider said the first generation crop for ethanol is corn. He said the second generation will be wheat and barley. He said switchgrass is a third generation feedstock for ethanol.

In response to a question from Senator Wardner, Mr. Zuger said it takes 3.5 gallons of water per gallon of ethanol. He said 2.8 gallons of the 3.5 gallons evaporates out of the cooling tower. He said the rest stays in the product. He said the typical plant discharges little or no water in liquid form.

In response to a question from Representative Meyer, Mr. Zuger said the Missouri River is the source of water for the Blue Flint Ethanol Plant.

In response to a question from Senator Wardner, Mr. Zuger said power is provided for the Blue Flint Ethanol Plant from steam from the Coal Creek Station.

In response to a question from Representative Meyer, Mr. Miller said the Red Trail Energy plant gets water from the Southwest Water Authority which pipes the water from Lake Sakakawea. He said the Red Trail plant uses 3 gallons of water for each gallon of ethanol. He said 70 percent of the water leaves the plant through the cooling tower.

In response to a question from Representative Meyer, Mr. Schneider said the Hankinson ethanol plant gets water from wells that are in the Milner aquifer.

In response to a question from Senator Horne, Mr. Schneider said there are 24,000 flex-fuel vehicles in North Dakota.

In response to a question from Senator Horne, Mr. Zuger said it does not cost more to make flex-fuel vehicles.

In response to a question from Senator Horne, Mr. Miller said Chrysler and General Motors have stated that 50 percent of the vehicles made by these companies will be flex-fuel vehicles by 2012.

In response to a question from Representative Porter, Mr. Schneider said most consumers base the purchase of ethanol products on price. He said the ethanol industry needs to educate consumers as to other benefits.

In response to a question from Representative Porter, Mr. Miller said ethanol has fewer British thermal units than gasoline. He said most of the loss in gas mileage comes when the vehicle is working hard. He said the loss in mileage is about 20 percent. He said E85 is a high performance fuel with octane over 100. He said if a manufacturer designs a vehicle to run on E85, the vehicle has the same performance and more horsepower than gasoline. He said the problem with flex-fuel vehicles in the United States is that the vehicles are designed to burn gas primarily and ethanol secondarily. He said vehicles may be designed to burn ethanol as the primary fuel.

The committee toured Red Trail Energy. No further business appearing, Chairman Wardner adjourned the meeting at 4:30 p.m. (MDT).

Timothy J. Dawson
Committee Counsel

ATTACH:7