

**EMPOWER NORTH DAKOTA COMMISSION MEETING**  
**March 30, 2010**  
**Jamestown, ND**

**NOTES**

**Meeting Purpose:** Review progress and evaluate the EmPower ND goals concerning ethanol and biomass/cellulosic ethanol.

**Tour of Great River Energy's (GRE) Spiritwood Station and Presentation on Project - Sandra Brokema, GRE**

- Coal-fired power plant scheduled to begin operating in October 2010. GRE still considering co-firing 10% biomass along with coal but is currently focusing on a future project element to build a cellulosic biorefinery, Dakota Spirit AgEnergy LLC.
- Dakota Spirit facility will use wheat straw and/or corn stover as primary feedstocks. If enzymes become available, switchgrass or other perennial energy crops will be considered as a potential additional feedstock.
- Products from Dakota Spirit include cellulosic biofuels, purified lignin (solid boiler fuels), and feed grade C5 molasses. Timeframe for commercial operation is 2014-2015.

**Report on the Energy Water Use Study – Bill Schuh, State Water Commission (SWC)**

- Legislature directed SWC to conduct study. Draft study provided to EmPower Commission. Final Report is due to the Legislative Committee Sept.1, 2010 and the SWC will make the Report available to the public sometime after Sept. 1.
- SWC has been interacting with industry in development of the study to summarize water use by each of the energy industries.
- Report content includes: 1) Description of water appropriation process; 2) Evaluation of water use for each energy industry including water quantity, quality and units; 3) Surface water supplies available for potential use; 4) Ground water supplies available for potential use; and 5) Review of water reuse.
- Assessment of aquifers and surface water with potential for additional appropriations looked at 15 study areas.
  - Aquifers are beginning to be heavily appropriated.
  - TOTAL AMOUNT POTENTIALLY AVAILABLE is 128,300 – 183,100 acre/feet in the following aquifers:
    - Sheyenne Delta (not sure this is the correct name).
    - Bedrock aquifers, Fox and Dakota: receive recharge from large area including Black Hills, E Montana, and W ND. Not recharging as much as in the past. Main aquifer that sustains communities and ranches in W ND.
    - Dakota aquifer – extends to E ND.
- Missouri River has potential for significant additional appropriations but a number of issues/problems need to be addressed:
  - Sovereign lands and access bigger problems than SWC permitting.
  - SWC has two water permits which take about 90 days to process

- Corps of Engineers – requires regulatory permit and work on Corps lands requires real estate permit. Applicants must provide information on water depots.
- SWC worked with Corps, FWS, and NDGFD to identify areas on Missouri River system where access will most likely be a problem due to concerns regarding threatened and endangered species or other natural resource or cultural/archeological resource concerns.
- Southwest Pipeline - ~6,400 acre/feet/year potentially available at an additional cost of \$42M.
- McClusky/New Rockford Canal – tens of thousands acre feet/acre available but New Rockford is at the Continental Divide and this would raise concerns from Canada.
- Apple Creek and Painted Woods – farm and ranch concerns with any additional appropriations from Apple Creek.
- Lake Tschida, Heart River – Potential of 3,900 acre feet/year.
- Lake Patterson – 3,500 acre feet/year for Municipal, Rural, and Industrial and wildlife and 3,100 acre feet/year vacated.
- Aquifer Recharge and Recovery – storage of spring flows in aquifer as the Forest River Hutterite Colony is currently doing.
- Municipal and Industrial Wastewater – substantial supply available.
- Tentative Timeline: Comments from energy industry by May 15, 2010 and final draft by June 30, 2010? Final due to Legislative Council by September 2010.

#### **Biomass/Cellulosic Ethanol and SWOT – John Weeda, GRE**

- Overview of Strengths, Weaknesses, Opportunities and Threats (SWOT) analysis was provided.
- Terry Goerger, Agriculture industry representative on EmPower, stated that he is not seeing producer interest in perennial energy crops because they are not economically competitive.
- Ken Hallevang, NDSU, stated that switchgrass is not the future in perennial energy crops.

#### **Energy Beets to Biofuel Study – Cole Gustafson, NDSU Green Vision Group**

- Long-term goal is to build ethanol plants across ND, facilitating sugar beet production in new areas and help meet advanced biofuel goals.
- Heartland Renewable Energy, Iowa is the project partner.
- Energy Independence and Security Act calls for 5 Billion Gallons/Year of advanced biofuel from sugar feedstocks.
- Renewable Fuels Standard, Second Stage calls for green house gas emission reductions, as follows: convention fuels (corn ethanol) 20%, advanced fuels (beets) 50%, and cellulosic 60%.
- NDSU received Agriculture Product Utilization Council grant for Feasibility Study conducted in 2008-2009 concluded:

- 20 Million Gallons/Year plant would require 1,511 tons of sugar beets and 220 tons of beet molasses on a daily basis for about 333 days, based on assumption that 70% of ethanol is produced from beets and 30% from beet molasses. Plant would require 30,000 acres to grow beets needed for ethanol production.
- \$1.25/gallon is breakeven price.
- Patented process of 70% of plant is thermal
- EPA Renewable Fuel Standard and Economic Model
  - Life cycle analysis needed.
  - Indirect land use – beets need additional land beyond existing acres to avoid competition with beet production on current acres.
- Beets have 3 x the yield as cellulosic ethanol feedstocks and 2 x the yield as corn ethanol and are more environmentally friendly. Counties identified as suitable plant locations include Williams, McHenry, Kidder, Ransom, and Grand Forks.
- Timeline: 2010 to build first energy beet ethanol plant.

#### **Ethanol and SWOT – Randy Schneider, ND Ethanol Producers Association**

- ND Ethanol Council includes Archer Daniels Midland, Blue Flint Ethanol, Hankinson Renewable, Red Trail, and Tharoldson Ethanol. Council has pooled money to advance the industry and has hired Deana Wiese as the Executive Director. Deana will be spending time on education/outreach about the benefits of ethanol.
- Indirect Land Use Issue – Used loss of rainforest as an example of misinformation on impacts of corn ethanol.
- Proposed ethanol pipeline to East Coast does not include ND which is a significant blow because the state will be at a cost disadvantage due to higher transportation costs.
- SWOT analysis identified the issues of Land Use Changes and Indirect Threats as a threat to the ethanol industry. Playing field needs to be leveled so that all industries are held to the same standards.

#### **Transportation and the Energy Industry – Francis Ziegler, ND Department of Transportation**

- Less flexibility in how Federal dollars can be used than in previous years and those dollars come with more Federal requirements.
- Becoming more difficult for State and Counties to maintain road system.
- Trying to work with oil and gas industry on road traffic issues.

#### **EmPower Policy Update Process – Mike Fladeland, ND Commerce Department**

- Next steps: EmPower will hold Committee meetings to revise current policy document to incorporate SWOT analyses and other information gathered through the policy review process. EmPower will meet in early June to finalize policies and develop a document for the legislature.