

MEETING MINUTES
LIGNITE RESEARCH COUNCIL

Thursday, November 15, 2018 – 1:30 p.m. (CT)
Ramada Bismarck Hotel (Judicial Room), Bismarck, ND

LIGNITE RESEARCH COUNCIL MEMBERS (or their authorized alternates) PRESENT:

Jason Bohrer – Lignite Energy Council (LEC)
John Bauer – Great River Energy
Wade Boeshans – BNI Energy
Randy Christmann – North Dakota Public Service Commission
Jeff Delzer – N.D. House of Representatives
Rita Faut – North Dakota Farm Bureau - Landowners
John Harju – Energy & Environmental Research Center (EERC)
Ray Holmberg – N.D. Senate
Bryan Walther – The Coteau Properties Company
Shawn Kessel – North Dakota Dept. of Commerce
Jay Kost – The Falkirk Mining Company
Gavin McCollam – Basin Electric Power Cooperative
Terry O’Clair – North Dakota Dept. of Health
Gerry Pfau – Minnkota Power Cooperative
John Phillips – Coal Conversion Counties
Al Rudeck – ALLETE Energy/Minnesota Power
Jay Skabo – Montana-Dakota Utilities Co.

OTHERS PRESENT:

Mike Holmes – Lignite Research Program
Laney DeGraw- LEC
Dave Allard – LEC
Kay LaCoe – LEC
Karlene Fine – North Dakota Industrial Commission
Andrea Pfennig - North Dakota Industrial Commission
Lynn Helms – North Dakota Industrial Commission – Department of Mineral Resources
Ron Ness – North Dakota Petroleum Council
Geoff Simon – Western Dakota Association
Jason Laumb - Energy & Environmental Research Center (EERC)
Brian Kalk - Energy & Environmental Research Center (EERC)
Tim Thoms – Mitsubishi Heavy Industries America, Inc.
Mike Fowler – Mitsubishi Heavy Industries America, Inc.
David Greeson – Minnkota Power Cooperative
Stacey Dahl – Minnkota Power Cooperative
Bill Sawyer – ALLETE/Minnesota Power
Reice Haase, North Dakota Governor’s Office
Ron Bryant, Burns & McDonnell
Mitsuaki Kato, Mitsubishi Heavy Industries
Dabo Gedafa, University of North Dakota
Amy Dalrymple – Bismarck Tribune

Lignite Research Council (LRC) Chairman, Jason Bohrer, called the LRC meeting to order at 1:34 p.m. (CT) on November 15, 2018 at the Ramada Inn, Bismarck, North Dakota. The meeting began with introductions of members and guests.

Approval of May 15, 2018 LRC Meeting Minutes:

Bohrer asked for a motion to approve the minutes of the May 15, 2018 LRC meeting. Jay Skabo so moved; seconded by Gerry Pfau. Motion carried.

Program Financial Summary:

Karlene Fine gave a financial summary regarding the Lignite Research, Development and Marketing Program.

Fine stated the Lignite Research Program Cash Balance for the 2017-2019 biennium as of September 30, 2018 is \$29,261,255.69. She reviewed the current outstanding commitments which total \$12,877,187.29. She stated that the estimated revenues for the biennium are \$15,637,500.00, and the General Fund one-time appropriation has a remaining balance of \$42,500.00 as of June 30, 2018.

Lignite Research, Development and Marketing Program Updates

Mike Holmes gave updates on the Lignite Research, Development & Marketing Program.

Research & Development Priorities for the LRC:

- Support continued options to enhance performance of the existing fleet
- Invest in transformational research (Next generation of Lignite conversion systems that integrate CO₂ capture)
- Focus on Carbon Capture Utilization & Storage (CCUS)
- Leverage international R&D breakthroughs
- Renewed Focus
 - Additional value propositions for lignite
 - Polygeneration opportunities

Carbon Management

- North Dakota has an ideal situation for CO₂ management
 - CO₂ emission sources are in close proximity to CO₂ storage targets
 - Between 23 and 78 Gt of storage available within the state between saline formations and oil reservoirs

At the conclusion of his presentation, Holmes handed out a summary of the projects that have been funded over the past two years.

Lynn Helms gave an Oil & Gas Update and noted the opportunities of CO₂ for enhanced oil recovery.

- Conventional oil wells are the “low-hanging fruit” for enhanced oil recovery. North Dakota has about 2,000 conventional oil wells as compared to more than 13,000 in the Bakken and Three Forks formations. Helms predicts that the drilling will continue for the next several decades and approximately 60,000 wells could be drilled in totality.
- Next year Denbury Resources will be using CO₂ from the Bell Creek, Montana, for enhanced oil recovery in the Cedar Hills conventional oil field in Bowman County, North Dakota.

- There should be a “sense of urgency” on behalf of the lignite industry to build infrastructure for CO₂ sources as traditional wells are decreasing and infrastructure from Montana and Wyoming are coming into the southwestern corner of the state.
- Helms said the landowners run a wide spectrum as to whether they are receptive to using CO₂ for enhanced oil recovery.

Grant Round LXXXVII (87) Grant Applications

The first project considered for funding was **Project Tundra – FEED (LRC-LXXXVIII-C)**

- Submitted by Minnkota Power Cooperative
- Request for up to \$15 million
- Total project costs: \$31.1 million
- Project duration: 32 months

The objective of the work is to complete a front-end engineering and design (FEED) study for a commercial carbon capture system retrofitted onto a power plant fueled by North Dakota lignite.

Two of the reviewers recommended funding the project and a third recommended “funding to be considered.” Mike Holmes, as the Technical Advisor to the North Dakota Industrial Commission, also recommended funding, noting that “the project represents the next step toward commercial carbon management in North Dakota and would benefit the entire lignite industry as well as oil.”

Representatives from the applicant summarized the work that would be done if the project were funded and the sources for the match funding.

The second project considered for funding was **Lignite Energy Council’s Annual Education Program – (LRC-LXXXXVII-A)**

- Submitted by Lignite Energy Council
- Request for \$100,000
- Total project costs: \$205,500
- Project duration: 12 months.

The objective of the Lignite Energy Council’s Education Program is to educate teachers, students and members of the general public about career opportunities, economic benefits and operations of the lignite industry.

Both reviewers recommended funding the project. Because this project was submitted by the Lignite Energy Council, Karlene Fine with the North Dakota Industrial Commission acted as the technical advisor for the project. She also recommended funding, noting the education program is consistent with the Workforce Development Council’s desire to “promote earlier and more diverse career exposure.”

Kay LaCoe presented information about the Annual Teachers Seminar and the video development that is part of this project.

The third project considered for funding was **Investigating the Use of Fly Ash for Sustainable Asphalt Pavements – (LRC-LXXXVII-B)**

- Submitted by UND Department of Civil Engineering
- Request for \$53,814
- Total project costs \$119,463
- Project duration: 12 months

Two of the reviewers recommended funding the project and a third recommended “funding to be considered.” Mike Holmes, as the Technical Advisor to the North Dakota Industrial Commission, also recommended funding/funding to be considered as the project has the potential to expand the market for fly ash.

Dabo Gedafa provided an overview of the project.

Next LRC Meeting and 2019 Grant Round deadline:

Bohrer announced that the next LRC meeting is scheduled for May 16, 2019.

The application deadline date for submitting proposals to the NDIC for the next grant round is April 1, 2019.

Ballot Results:

Bohrer announced the results of the LRC's ballots concerning the LRC's recommendations to the NDIC regarding the Grant Round LXXXVII (87) proposals as follows:

• **LRC-LXXXXVII-A: Lignite Energy Council's Annual Education Program**

- Submitted by Lignite Energy Council; Request for \$100,000
- Total project costs: \$205,500; Project duration: 12 months.

Fund: 16 votes

Do Not Fund: 0 vote

Abstain: 0 vote

• **LRC-LXXXVII-B: Investigating the Use of Fly Ash for Sustainable Asphalt Pavements**

- Submitted by UND Department of Civil Engineering; Request for \$53,814
- Total project costs \$119,463; Project duration: 12 months

Fund: 16 votes

Do Not Fund: 0 vote

Abstain: 0 vote

• **LRC-LXXXVIII-C: Project Tundra – FEED**

- Submitted by Minnkota Power Cooperative; Request for up to \$15 million
- Total project costs: \$31.1 million; Project duration: 32 months

Fund: 14 votes

Do Not Fund: 1 vote

Abstain: 1 vote

Adjournment:

There being no further business, Bohrer requested a motion for adjournment of the LRC meeting at 3:56 p.m. Rita Faut so moved; seconded Jay Skabo. Motion carried.

Minutes prepared by Steve Van Dyke, Lignite Energy Council

Amendment to minutes: The May 16, 2019, meeting will be rescheduled.
