Lignite Research Council (LRC) Chairman, Jason Bohrer, called the LRC meeting to order at 1:33 p.m. (CDT) on May 18, 2017, at the Ramada Inn, Bismarck, North Dakota.

Approval of February 23, 2017 LRC Meeting Minutes:

Bohrer asked for a motion to approve the minutes of the February 23, 2017 LRC meeting. John Philips so moved; seconded by Wade Boeshans. Motion carried.

Program Financial Summary:

Karlene Fine gave a brief financial summary regarding the Lignite Research, Development and Marketing Program. (A copy of the financial report is available in the files.)

Fine stated that the LRC Cash Balance as of March 31, 2016 is $21,315,758.10 with $10,232,976.56 of outstanding commitments. She said the 2015-2017 biennium budget has $1,379,350 uncommitted and available to fund projects.
Program’s Project Updates:

Holmes, Technical Advisor to the NDIC and the LRC, gave updates about active R&D projects (seven carbon capture and storage projects, one gasification projects, one demonstration project, one Lignite Vision 21 Program (LV21) project, two metal emissions projects, one education/public relations projects, three NOx projects, two Lignite Beneficiation project, one reclamation project, and one marketing.

Grant Round LXXXIII (83) Grant Application


Holmes said the primary objective of this project is to show lab work and subsequent analysis that has three objectives:
- Demonstrate the extent to which alkaline lignite ash can be neutralized by acidic flue gas (in the presence of methanol), converting metal oxides such as CaO into carbonates such as calcium carbonate.
- Determine the extent to which the REE content of the ash leaches into the wet methanol that hosts the VCCS reaction, allowing a decanted stream of wet methanol to be a concentrated “carrier” of REEs
- Determine the extent to which the solid carbonates that are mixed with the other treated solids can be distinguished from the sand, aluminum oxide (and other solids), so as to allow for the mechanical separation of the carbonates.

Following the successful completion of Phase II, a subsequent Phase III project would build, deploy and test the Pilot Plant designed in Phase I of these studies.

Holmes said that the three technical peer reviewers for this proposal gave the proposal an average weighted score of 198.3 out of 250 points. The weighted score was 186 out of 250 from reviewer 18-07, 177 out of 250 from reviewer 18-08, and 232 out of 250 from reviewer 18-09. Technical peer reviewers 18-01, 18-02 and 18-03 all recommended funding the project.

As the Technical Advisor to the NDIC and LRC, Holmes recommended that the project be Fund with the following contingencies: matching funds received, Technical Advisor participates in advisory group and Technical Advisor reviews project management plan with the project manager.

Holmes said that Great River Energy, EERC and North American Coal have conflicts of interest for proposal LRC-LXXXIII-C

Jeremy Dockter with the Expansion Energy LLC did a presentation in support of LRC-LXXXIII-C.


Holmes said through collaboration between top research facilities (NDSU and EERC) and industry partners there is a tremendous potential to deliver a valuable project to the State of increased agricultural production by utilizing resources from lignite-fired power plants. The availability of excess heat and CO₂ at a common location presents a unique opportunity for a link between agriculture and the energy industry. Resources that are not currently being utilized at a lignite power plant could be used to benefit agriculture and will decrease the carbon footprint of the plant.

Holmes said that the three technical peer reviewers for this proposal gave the proposal an average weighted score of 202 out of 250 points. The weighted score was 182 out of 250 points from reviewer 18-10, 208 out of 250 from reviewer 18-11, and 216 out of 250 from reviewer 18-12. Technical peer reviewers 18-10, 18-11 and 18-12 all recommended funding the project.
As the Technical Advisor to the NDIC and LRC, Holmes recommended that the project be Fund with the following contingencies: matching funds received, Technical Advisor participates in advisory group and Technical Advisor reviews project management plan with the project manager.

Holmes said that Great River Energy, EERC, North American Coal, and Great Northern Properties have conflicts of interest for proposal LRC-LXXXIII-D.

Gerard Goven with the North American Coal and Steve Knorr of Knorr Farms did a presentation in support of LRC-LXXXIII-D.

Bohrer asked for a motion to close the meeting prior to the confidential session regarding Grant Application LRC-LXXXIII-E. It was moved by Matthew Greek and seconded by Dave Sauer that under the authority of North Dakota Century Code Sections 54-17.5 and 44-04-18.4 the Lignite Research Council close the meeting to the public and enter executive session for the purpose of hearing and discussing the applicant’s proprietary information. Motion carried. The executive session began at 2:43 p.m.

LRC-LXXXIII (83)-E: Investigation of Rare Earth Element Extraction from North Dakota Coal-Related Feedstocks, Submitted by: Institute for Energy Studies UND, PI: Steve Benson, Request: $280,000, Total Project Costs: $3,437,500, Project Duration: 18 Months

Holmes said the primary goal of the proposed Phase II project is to demonstrate at a bench-scale (10 to 20 kg/hr) a high performance, economically viable, and environmentally benign technology to recover rare earth elements (REE) from North Dakota lignite coal or lignite-related feed stocks.

Holmes said that the three technical peer reviewers for this proposal gave the proposal an average weighted score of 224 out of 250 points. The weighted score was 228 out of 250 points from reviewer 18-13, 228 out of 250 from reviewer 18-14, and 216 out of 250 from reviewer 18-15. Technical peer reviewers 18-13, 18-14 and 18-15 all recommended funding the project.

As the Technical Advisor to the NDIC and LRC, Holmes recommended that the project be Fund with the following contingencies: matching funds received, Technical Advisor participates in advisory group and Technical Advisor reviews project management plan with the project manager.

Holmes said that EERC, North American Coal Corporation and Great River Energy have conflicts of interest for proposal LRC-LXXXIII-E.

Dr. Steve Benson and Dr. Dan Laudal of the Institute for Energy Studies UND did a presentation in support of LRC-LXXXIII-D.

Bohrer asked for a motion to open the meeting at 3:20 p.m. following the executive session. Senator Ray Holmberg so moved; seconded by Al Rudeck. Motion carried.

Next LRC Meeting & NDIC meeting to consider LRC’s recommendations, 2017 Grant Round deadlines:

Holmes announced the possibility of a summer grant round.

Bohrer announced that the next LRC meeting is scheduled for November 16, 2017.

The application deadline date for submitting proposals to the NDIC for the next grant round is October 1, 2017.

Ballot Results:

Bohrer announced the results of the LRC's non-confidential ballots concerning the LRC’s recommendations to the NDIC regarding the Grant Round LXXXIII (83) proposal & modifications as follows:
• LRC-LXXXIII (83)-C: “Carbon Capture & Utilization Using "VCCSTM Cycle" Technology - Phase II: Mineralization of Acidic Flue Gas CO2 via Chemical Reaction with Alkaline Lignite Fly Ash Extraction of Marketable Minerals & Other Commodities from Lignite Fly Ash”
  Submitted by: Expansion Energy, LLC ; Request for: $62,000 ; Total Project Costs: $124,000 ; Principal Investigator: David Vandor; Project Duration: 16 weeks

  Fund: 17 votes  Do Not Fund: 0 vote  Abstain: 0 vote

• LRC-LXXXIII (83)-D: “Resource Recovery from a Coal-Fired Power Plant to Enhance Agricultural Production in Open Field and Greenhouse Facilities”
  Submitted by: North American Coal Corporation ; Request for: $150,000 ; Total Project Costs: $299,557 ;
  Principal Investigator: Gerard Goven; Project Duration: 14 months

  Fund: 16 votes  Do Not Fund: 1 vote  Abstain: 0 vote

• LRC-LXXXIII (83)-E: “Investigation of Rare Earth Element Extraction from North Dakota Coal-Related Feedstocks”
  Submitted by: Institute for Energy Studies UND ; Request for: $280,000 ; Total Project Costs: $3,437,500 ;
  Principal Investigator: Steve Benson ; Project Duration: 18 months

  Fund: 17 votes  Do Not Fund: 0 vote  Abstain: 0 vote

Adjournment:

There being no further business, Bohrer requested a motion for adjournment of the LRC meeting at 3:26 p.m. Justin Dever so moved; seconded Matthew Greek. Motion carried.

Laney DeGraw, recording secretary