

**MEETING MINUTES**  
**LIGNITE RESEARCH COUNCIL**

**June 5, 2014**

**Ramada Bismarck Hotel (Judicial Room), Bismarck, ND**

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

Matt Greek – Basin Electric Power Cooperative  
Charlie Bullinger – Great River Energy  
Gerry Pfau - Minnkota Power Cooperative, Inc.  
Bob Fagerstrom – Dakota Gasification Company  
Pat Clement - BNI Coal, Ltd.  
Gerard Govern – The Falkirk Mining Company  
Brad Zimmerman – Otter Tail Power Company  
Jason Bohrer, Lignite Research Council; chairman of the Lignite Research Council  
Randy Christmann - ND Public Service Commission  
Jeff Delzer – North Dakota House of Representatives  
John Dwyer – Past Chairman of the Lignite Research Council  
Paul Govig – North Dakota Department of Commerce  
Dave Glatt – North Dakota Department of Health  
Ray Holmberg - North Dakota Senate  
Ned Kruger – ND Geological Survey  
John Phillips – North Dakota Coal Conversion Counties Association  
Randy Bartsch – International Brotherhood of Electrical Workers  
Todd Simmons – Minnesota Power

**OTHERS PRESENT:**

Srivats Srinivasachar – Envergen, LLC  
Joe Colannino – CleanSign Combustion Corporation  
Brady Pelton – North Dakota Coal Conversion Counties Association  
Dave Allard - Lignite Energy Council  
Karlene Fine - North Dakota Industrial Commission  
Steve Van Dyke - Lignite Energy Council  
Michael L. Jones, Ph.D. - Lignite Research Council Technical Advisor; Lignite Energy Council  
John Pavlish – Energy & Environmental Research Center  
Dave Smith, Ph.D. – SaskPower

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Lignite Research Council (LRC) Chairman Jason Bohrer called the LRC meeting to order at 1:35 p.m. (CDT) on June 5, 2014, at the Ramada Bismarck Hotel, Bismarck, North Dakota.

**Approval of November 19, 2014 LRC Meeting Minutes:**

Bohrer asked for a motion to approve the minutes of the November 19, 2013 LRC meeting. Randy Christmann so moved; seconded by Pat Clement. Motion carried.

**Program Financial Summary:**

Karlene Fine and Michael Jones gave a brief financial summary regarding the Lignite Research, Development and Marketing Program (Program).

Fine said that the Program's available funding (as of 5/1/14) includes: \$553,576 for administration of the Program; \$1,245,565 for litigation (Minnesota); \$0 for non-matching Lignite Marketing Feasibility Study (LMFS) projects; \$1,260,441 for Small Research Projects; \$600,000 for Marketing Projects; and \$3,104,042 for Demonstration Projects. She noted that there was sufficient funding for the projects to be considered.

**Program's Project Updates:**

Jones, Technical Advisor to the NDIC and the LRC, gave updates about active R&D projects (six carbon capture and storage projects, three gasification projects, three demonstration projects, three Lignite Vision 21 Program (LV21) projects, two metal emissions projects, two education/public relations projects, two NOx projects one marketing, and one fly ash reuse project. He also gave an update about the Enhance, Preserve and Protect project, which included notice that the Federal Judge in the lawsuit between Minnesota and North Dakota regarding the NextGen Act of 2007 had ruled in North Dakota's favor.

**Grant Round LXXVII (77) Grant Application LRC-LXXVII-A:** "Combustion Enhancement of Solid Fuels Using ClearSign's Technologies"; Submitted by: ClearSign Combustion Corporation; Request for: \$50,000 (Small Research); Total Project Costs: \$400,000; Principal Investigator: Joe Colannino.

Jones said that the main objective of this project is to test a technology that can manipulate the flame using high-voltage electric fields to prevent pollution from forming using a lignite-fired system.

Jones said that the three technical peer reviewers for this proposal gave the proposal an average weighted score of 208 out of 250 points. The weighted score was 189 out of 250 points from reviewer 14-1, 153 out of 228 points from reviewer 14-2 and 207 out of 250 points from reviewer 14-3. Technical peer reviewers 14-1, 14-2 and 14-3 recommended that the project be funded. As Technical Advisor to the NDIC and LRC, Jones recommended that the project be funded, subject to the following contingency:

Matching funding received and Technical Advisor participants in advisory group.

Jones said that Great River Energy and SaskPower are the conflict-of-interest parties for proposal LRC-LXXVII-A.

Joe Colannino with ClearSigns Combustion Corporation gave a presentation in support of proposal LRC-LXXVII-A.

**Grant Round LXXVII (77) Grant Application LRC-LXXVII-C:** "Validation of the Multielement Sorbent Trap (MEST) Method for Measurement of HCl and Metals"; Submitted by: Energy and Environmental Research Center; Request for: \$245,000 (Demonstration); Total Project Costs: \$860,000; Principal Investigator: John Pavlish.

Jones said that the main objective of this project is to provide data to EPA to gain acceptance for this testing method. The project aims are to validate a simple, low-cost method for measuring HCl by collecting specific data that can be used to support determination and acceptance of MEST-H as an alternative method to M26 and M26a.

Jones said that the three technical peer reviewers for this proposal gave the proposal an average weighted score of 166.67 out of 250 points. The weighted score was 159 out of 250 points from reviewer 14-7, 175 out of 250 points from reviewer 14-8 and 166 out of 250 points from reviewer 14-9. Technical peer reviewers 14-7, 14-8 and 14-9 recommended funding to be considered.

As Technical Advisor to the NDIC and LRC, Jones recommended that the project be funded, contingent on the following: Matching funding received and Technical Advisor participate in advisory group.

Jones said that Basin Electric, Otter Tail Power and Minnesota Power are the conflict-of-interest parties for proposal LRC-LXXVII-C.

John Pavlish with the Energy & Environmental Research Center did a presentation in support of proposal LRC-LXXVII-C.

**Grant Round LXXVII (77) Grant Application LRC-LXXVII-B:** “Enhanced High Capacity Sorbent and Process for CO<sub>2</sub> Capture Using Hybrid Sorption (E-CACHS™)”; Submitted by: Envergex, LLC; Request for: \$50,000; Total Project Costs: \$1,099,967; Principal Investigator: Srivats Srinivasacher.

Jones said that the main objective of this project is scale-up methods for producing the sorbents to maximize the CO<sub>2</sub> loading capacity. In addition, an enhanced process configuration that: 1) reduces sorbent attrition; 2) accommodates operation with a finer particle size distribution, and 3) incorporates a method to increase sorbent life, will also be demonstrated.

Jones said that the technical peer reviewers for this proposal gave the proposal an average weighted score of 196.7 out of 250 points. The weighted score was 179 out of 250 points from reviewer 14-4, 197 out of 250 points from reviewer 14-5 and 214 out of 250 points from reviewer 14-6. Technical peer reviewers 14-4, 14-5 and 14-6 recommended that the project be funded.

As Technical Advisor to the NDIC and LRC, Jones recommended that the project be funded, contingent on the following:

Matching funding received and Technical Advisor participate in advisory group.

SaskPower, BNI and Minnesota Power are the conflict-of-interest parties for this proposal.

Srivats Srinivasachar, with Envergex, was the presenter in support of proposal LRC-LXXVII-B

**Motion for Closed Confidential Session re: “Resubmission of the Regional Lignite Public Affairs Plan (Coalition for a Secure Energy Future)”:**

Bohrer asked for a motion to close the meeting prior to the confidential session regarding the resubmission of the Regional Lignite Public Affairs Plan (Coalition for a Secure Energy Future). It was moved by Sen. Ray Holmberg and seconded by Charlie Bullinger that the Lignite Research Council meeting be closed pursuant to 54-17.5-06. Motion carried.

**Motion to Open Session Following Closed Confidential Session:**

Bohrer asked for a motion to open the meeting following the confidential session. John Dwyer so moved; seconded by Sen. Ray Holmberg. Motion carried.

**Next LRC Meeting; NDIC Meeting to Consider LRC’s Recommendations; 2014 Grant Round Deadlines:**

Bohrer announced that the next LRC meeting is scheduled for November 18, 2014 at the Ramada Bismarck Hotel.

Bohrer said that the LRC's recommendations concerning the Grant Round LXXVII (77) requests will be considered by the ND Industrial Commission at its meeting on July 1, 2014.

The application deadline dates for submitting proposals to the NDIC for the next grant rounds are: October 1, 2014 and April 1, 2015.

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**Ballot Results:**

Bohrer announced the results of the LRC's confidential ballots concerning the LRC's recommendations to the NDIC regarding the three Grant Round LXXVII (77) proposals as follows:

- **Grant Round LXXVII (77) Grant Application LRC-LXXVII-A:** “Combustion Enhancement of Solid Fuels Using ClearSign’s Technologies”:

**Fund: 19 votes.      Do Not Fund: 0 votes.**

- **Grant Round LXXVII (77) Grant Application LRC-LXXVII-C:** “Validation of the Multielement Sorbent Trap (MEST) Method for Measurement of HCl and Metals”:

**Fund: 16 votes.      Do Not Fund: 3 votes.**

- **Grant Round LXXVII (77) Grant Application LRC-LXXVII-B:** “Enhanced High Capacity Sorbent and Process for CO<sub>2</sub> Capture Using Hybrid Sorption (E-CACHS™)”:

**Fund: 19 votes.      Do Not Fund: 0 votes.**

- **Grant Round LXXVII (77) Grant Application LRC-LXXVII-D:** “Resubmission of the Regional Lignite Public Affairs Plan (Coalition for a Secure Energy Future)”:

**Fund: 18 votes.      Do Not Fund: 0 votes. 1 Abstained**

**Adjournment:**

There being no further business, Bohrer requested a motion for adjournment of the LRC meeting. John Dwyer so moved; seconded by Sen. Ray Holmberg. Motion carried.