

MEETING MINUTES
LIGNITE RESEARCH COUNCIL

November 15, 2011
Best Western Doublewood Inn, Bismarck, ND

MEMBERS (or their authorized alternates) PRESENT:

Fred Anderson - North Dakota Geological Survey
Tom Bachman – North Dakota Department of Health
Randel Christmann, North Dakota State Senate; Lignite Research Council Vice-Chairman
Jim Deutsch – North Dakota Public Service Commission
Carroll Dewing - The Coteau Properties Company
John Dwyer - Lignite Energy Council; Lignite Research Council Chairman
Layton Freborg - North Dakota State Senate
Paul Govig – North Dakota Department of Commerce
Jay Kost – The Falkirk Mining Company
Luther Kvernen - Minnkota Power Cooperative, Inc.
Bob Montgomery - Westmoreland Coal Company
John Phillips – North Dakota Coal Conversion Counties Association
Al Rudeck – Minnesota Power
Jan Rudolf - Otter Tail Power Company
Dave Schmitz - BNI Coal, Ltd.
Dave Smith, Ph.D. - SaskPower
Rich Voss - Great Northern Project Development
John Weeda - Great River Energy

OTHERS PRESENT:

Dave Allard - Lignite Energy Council
Steve Benson, Ph.D. – University of North Dakota Institute for Energy Studies
Karlene Fine - North Dakota Industrial Commission
Vicki Gilmore - Lignite Energy Council
Curtis Jabs – Basin Electric Power Cooperative
Michael L. Jones, Ph.D. - Lignite Research Council
Brady Pelton – North Dakota Oil & Gas Producing Counties
James J. Sheldon – Basin Electric Power Cooperative
Josh Skelton – Minnesota Power
Srivats Srinivasachar, Ph.D. – Envergenx LLC
Sandi Tabor – Lignite Energy Council
Charles Thumbi – University of North Dakota Institute for Energy Studies

Lignite Research Council (LRC) chairman John Dwyer called the LRC meeting to order at 1:05 p.m. (CST) November 15, 2011 at the Best Western Doublewood Inn, Bismarck, ND.

Approval of May 17, 2011 LRC Meeting Minutes:

Dwyer asked for a motion to approve the minutes of the May 17, 2011 LRC meeting. Luther Kvernen so moved; seconded by Al Rudeck. Motion carried.

Program Financial Summary:

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

Fine said that the \$11,555,365 available funding for the 2011-2013 biennium (as of 11/1/11) includes: \$637,359 for administration of the Program; \$355,365 for litigation (Minnesota); \$1,500,000 for non-matching Lignite Marketing Feasibility Study (LMFS) projects. (Fine said that she anticipates that the majority of these non-matching funds will be used for the Minnesota litigation case during the 2011-2013 biennium); \$1,000,000 for Small Research Projects; \$498,300 for Marketing Projects; and \$7,404,000 for Demonstration Projects. (The \$7,404,000 for Demonstration Projects does not include the commitment of \$12,976,715 over future biennia for the Lignite Vision 21 Program projects (the Coal-to-Liquids project, the Spiritwood Energy project and the Great Northern Project Development project).

Overview of Proposed Future Budget Allocations for 2011-2013 Biennium:

Fine discussed the proposed future budget allocations for the Program for the 2011-2013 biennium, and handed out a document listing the proposed budget items. The document listed the total proposed budget for the Program for the 2011-2013 biennium as \$11,555,365.

Consideration of Proposed Future Budget Allocations for 2011-2013 Biennium:

Dwyer called for a motion to approve the Lignite Research Program's proposed future budget allocations for the Lignite Research Program (Program) for the 2011-2013 biennium. Randel Christmann so moved; seconded by Carroll Dewing. Motion carried.

Program's Project Updates:

Jones, technical advisor to the NDIC and the LRC, gave updates about the Program's active R&D projects (eight of which concern carbon capture and storage; five demonstration projects, four Lignite Vision 21 (LV21) Program-related projects, two gasification projects, one NOx-related project, two metal emissions projects and two education/public relations projects. He also summarized the two LV21 Phase VI studies that relate to beneficial use of CO₂, and advanced power options for a green-fields 175 MW lignite-fired power plant.

James Sheldon gave a short presentation about Basin Electric Power Cooperative's final report on the project titled "CO₂ Capture Demonstration Project".

Grant Round LXXII (72) Grant Application LRC-LXXII-A: "Evaluation of CO₂ Capture from Existing Coal Fired Plants by Hybrid Sorption Using Solid Sorbents (CACHYS™)"; Submitted by: University of North Dakota (UND) Institute for Energy Studies; Request for: \$350,000; Total Project Costs: \$3,690,000; Principal Investigators: Steven A. Benson, Ph.D. (UND Institute for Energy Studies) and Srivats Srinivasachar, Ph.D. (Envergen LLC); Project Duration: Three Years.

Jones said that the project's team proposes to develop and demonstrate a hybrid solid sorbent-based process to capture CO₂ from flue gas using novel process chemistry and contactor conditions. The goal is cost-effective CO₂ capture and separation technology applicable to lignite-based power plants.

Jones said that the three technical peer reviewers for this proposal gave the proposal an average weighted score of 196.7 out of 250 points. The weighted score was 215 out of 250 points from reviewer 11-07, 216 out of 250 points from reviewer 11-08 and 159 out of 250 points from reviewer 11-09. Technical peer reviewers 11-07 and 11-08 recommended that the project be funded; technical peer reviewer 11-09 recommended that funding may be considered.

As technical advisor to the NDIC and LRC, Jones recommended that the project be funded, subject to the following:

- Matching Funding received from all parties.
- Inclusion of go/no go milestones that demonstrate the potential for this technology to be at least competitive with other options for effective CO₂ capture currently demonstrated.

Jones said that Minnesota Power, SaskPower and BNI Coal, Ltd. are conflict-of-interest parties for proposal LRC-LXXII-A.

A portion of grant application LRC-LXXII is confidential. The review of and discussion about the confidential portion of the grant application and the independent technical peer reviewers' comments were held in confidential session. Dwyer asked for a motion to close the LRC meeting for the confidential session. John Weeda so moved; seconded by Al Rudeck. Motion carried. The meeting went into confidential session at 1:45 p.m. Discussion and a presentation about the proposal followed.

At the end of the confidential session, Dwyer called for a motion to open the LRC meeting. Weeda so moved; seconded by Christmann. Motion carried. The meeting returned to open session at 2:15 p.m.

Special Presentation:

Dwyer presented a plaque to Dave Smith of SaskPower. It is the "Distinguished Service Award for Research and Development". The award was among those announced at the Lignite Energy Council's annual meeting held Oct. 5-6, 2011 in Bismarck. Smith was unable to attend that meeting to accept the award.

Ballot Results: LRC's Recommendations to NDIC Regarding Grant Round LXXII(72) Proposal LRC-LXXII-A:

Dwyer announced the results of the LRC's confidential ballots concerning the LRC's recommendations to the NDIC regarding the Grant Round LXXII(72) proposal, as follows:

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

NDIC Meeting:

Dwyer said that the LRC's recommendations concerning the Grant Round LXXII(72) request will be considered by the NDIC at its meeting on Nov. 21, 2011.

Grant Application Deadline Dates; Next LRC Meeting:

The grant application deadline dates for 2012 are October 1 and April 1. The next LRC meeting has been scheduled for May 17, 2012 at the Best Western Doublewood Inn, Bismarck.

Adjournment:

There being no further business, Dwyer requested a motion to adjourn the LRC meeting. Dewing so moved; seconded by Dave Schmitz. Motion carried. The meeting adjourned at 2:25 p.m. November 15, 2011.

Vicki Gilmore, Recording Secretary
