

MEETING MINUTES
LIGNITE RESEARCH COUNCIL
May 19, 2009
Best Western Doublewood Inn, Bismarck, ND

MEMBERS (or their authorized alternates) PRESENT:

Mike Briggs, The Falkirk Mining Company
Randel Christmann, North Dakota State Senate (District 33)
Jim Deutsch, North Dakota Public Service Commission
Tom Durham, Westmoreland Coal Company
John W. Dwyer, Lignite Energy Council; Lignite Research Council Chairman
Layton Freborg, North Dakota State Senate (District 8)
Joe Friedlander, The Coteau Properties Company
David Glatt, North Dakota Department of Health
Paul Govig, North Dakota Department of Commerce
Carlyle Hillstrom, North Dakota Farm Bureau
Mike Holmes, Energy & Environmental Research Center
Mike Hummel, BNI Coal, Ltd.
Luther Kvernen, Minnkota Power Cooperative, Inc.
Ed Murphy, North Dakota Geological Survey
John Phillips, ND Coal Conversion Counties Association
Al Rudeck, Minnesota Power
Dave Smith, SaskPower
Duane Steen, Montana-Dakota Utilities Co.
Jenny Tennant, U. S. Department of Energy – National Energy Technology Laboratory
Mark K. Thompson, Basin Electric Power Cooperative
John Weeda, Great River Energy

OTHERS PRESENT:

Dave Allard, Lignite Energy Council
Jeff Burgess, Lignite Research Council
Karlene Fine, North Dakota Industrial Commission
Gordon Foster, Calnetix, Inc.
Rich Garman, Great River Energy
Vicki Gilmore, Lignite Energy Council
Shamim Imani, Calnetix, Inc.
Adam Mikkelsen, Calnetix, Inc.
Lee Meyer, Carbon Fuels
Joe Rothschilder, Steffes Corporation
Dave Schmitz, HDR Engineering
Sandi Tabor, Lignite Energy Council

Lignite Research Council (LRC) chairman John Dwyer called the LRC meeting to order at 12:10 Central Time) May 19, 2009, at the Best Western Doublewood Inn, Bismarck, ND.

Approval of November 25, 2008 LRC Meeting Minutes:

Dwyer asked for a motion to approve the minutes of the November 25, 2008 LRC meeting. Luther Kvernen so moved; seconded by Mike Hummel. Motion carried.

Program Financial Summary:

Karlene Fine, executive director and secretary of the North Dakota Industrial Commission (NDIC), briefly summarized the Lignite Research Program's (Program) available funding.

Available funding for the 2007-2009 biennium (as of 5/19/09) is \$120,468 for administration of the Program; \$418,519 for litigation; \$1,000,000 for non-matching feasibility studies (Lignite Energy Council Lignite Vision 21 Program, transmission, litigation, etc.); \$694,725 for small research projects; \$0 for marketing projects; and \$1,831,994 for demonstration projects. (The \$1,831,994 does not include the commitment of \$10,725,000 over future biennia for the final phases of the Coal-to-Liquids project or the Spiritwood Energy project and the \$2,000,000 of the committed non-Lignite Vision 21 Program projects.)

Jeff Burgess, technical advisor for the NDIC and the LRC, summarized the Lignite Research, Development and Marketing Program (Program) financial information. From 1987 to present, there have been 128 small research projects (\$16.8 M from NDIC for the 128 projects; \$104 M total project costs; \$1 in state funds to \$6 total investment); 21 demonstration projects excluding Lignite Vision 21 Program (LV21P) projects (\$21.4 M from NDIC for the 21 projects; \$362 M total project costs; \$1 in state funds to \$17 total investment); and eight LV21P projects (\$22.2 M from NDIC; more than \$240 M total project costs.)

He said that the current technical advisor activities involve 28 projects (\$32 M from NDIC; \$514 M total project costs). There is one marketing project (\$2.4 M from NDIC; \$4.8 M total project cost); 13 small research projects (\$2.5 M from NDIC; \$38.6 M total project costs); and 13 demonstration projects: (\$7.1 M from NDIC for 10 non-LV21P projects; \$234 M total project costs); (\$19.3 M from NDIC for three LV21P projects; more than \$235 M total project costs).

Project Updates:

Burgess gave a brief review of the 23 active projects: one Lignite Energy Council LV21P project, three separate LV21P projects, four mercury-related projects, one NOx-related project; three lignite gasification-related projects, six CO₂ CCS-related projects, one regional lignite energy marketing project (Partners for Affordable Energy), one lignite-fueled demonstration for agricultural production (Red Trail Energy) project, two coal combustion products projects, and one air toxics metals project (CATM). He also gave a brief review of Lignite Vision 21 Program projects as well as an update about the use of non-matching research, demonstration and marketing funds.

Grant Round LXVI (66) Grant Application LRC-LXVI-A: "Viability of North Dakota Lignite as a Feedstock for a Commercial Charfuel Coal Refining Facility in North Dakota"; Submitted by: Carbon Fuels, LLC; Principal Investigator: Lee G. Meyer; Request for: \$1,493,171; Total Project Costs: \$2,986,343; Project Duration: Nine Months:

Burgess said that with this project, Carbon Fuels, LLC proposes to demonstrate the viability of using North Dakota lignite as a feedstock for the proprietary Charfuel Coal Refining process, which processes coal into liquid fuels, petrochemicals, fertilizer, metallurgical coke and boiler fuel in a manner that is conceptually similar to the way crude oil is refined in conventional oil refineries. The project would involve configuring the 18 ton per day (tpd) Charfuel demonstration facility at Hazen Research in Colorado; testing ND lignite in two 6-7 hour test runs; document and report sample analyses of char, process stream gases and liquids; and generate pre-FEED documents for a 500/2500 tpd Charfuel demonstration facility in North Dakota.

Burgess said that the three technical peer reviewers gave the proposal an average weighted score of 153 out of 250 points. The weighted scores were 120 out of 250 points from reviewer 09-1, 197 out of 250 points from reviewer 09-2 and 142 out of 250 points from reviewer 09-3. Technical peer reviewer 09-2 recommended that the project be funded; technical peer reviewers 09-1 and 09-2 recommended that project not be funded.

As technical advisor, Burgess recommended that funding may be considered (demonstration project funds). He said that should the LRC recommend funding for this project, the following contingencies should be considered:

- The LRC R&D Director should be added to the Management Team and participate in review meetings.
- Disbursement of NDIC funds will be on a reimbursement basis. \$200,000 will be disbursed upon execution of the contract. The remaining amount, up to \$1,293,171 will be provided to the contractor upon submission of the deliverables specified in Carbon Fuels application, supporting documents dated April 10 and May 11, 2009, and certification of expenditures equal to, or exceeding the amount, to be disbursed by the NDIC.

Burgess said that The North American Coal Corporation and Montana-Dakota Utilities are conflict-of-interest parties for this proposal.

Lee Meyer of Calnetix Inc. gave a presentation in support of the proposal.

Grant Round LXVI (66) Grant Application LRC-LXVI-B: “Application of Waste Heat Recovery Generation at Great River Energy’s Coal Creek Station”; Submitted by: Calnetix Inc.; Principal Investigator: Shamim Imani; Request for: \$330,000 (\$80,00 for Step 1; \$250,000 for Step 2); Total Project Costs: \$896,745; Project Duration: 22 Months:

Burgess said that with this project, Calnetix, together with Great River Energy and HDR Engineering, proposes to:

Step 1) Identify usable low temperature waste heat sources within a lignite power plant, and validate that sufficient usable waste heat exists, and can be accessed, from one or more of these sources to power multiple Calnetix’s planned 1-2 MWe units.

Step 2) Then, a Calnetix WHG 100 would be installed at one such heat source and a demonstration conducted to determine the feasibility of generating electricity from it.

Burgess said that the three technical peer reviewers gave the proposal an average weighted score of 172 out of 250 points. The weighted scores were 184 out of 250 points from reviewer 09-4, 174 out of 250 points from reviewer 09-5 and 159 out of 250 points from reviewer 09-6. Technical peer reviewer 09-5 recommended that the project be funded; technical peer reviewers 09-4 and 09-6 recommended that funding may be considered.

As technical advisor, Burgess recommended that the project be funded (demonstration project funds). He said that should the LRC recommend funding for the project, the following contingency should be included:

- NDIC funds should not be disbursed for Step 2, unless Calnetix received the U. S. Department of Energy (DOE) funding referenced in the grant application. (Fine said that this contingency was not written on the ballots that will be distributed to the LRC members present for their votes at today’s meeting, but that she wanted to inform LRC about the contingency before they submitted their ballots to her.)

Burgess said that Great River Energy is the conflict-of-interest party for this proposal.

Adam Mikkelsen and Shamim Imani, both of Calnetix Inc., gave presentations in support of the proposal.

Establishment of Grant Round for June 1, 2009:

Dwyer asked for a motion for the establishment of a June 1, 2009 grant round. Randel Christmann so moved; seconded by John Weeda. Motion carried.

LRC Rule Revision Process Update:

Fine gave a brief update about the LRC rules revision process. She said that the revised rules are expected to be ready in July 2009.

2009 Legislative Update:

Dwyer gave an update about the 2009 North Dakota Legislature's action on lignite-related bills, including: The Lignite Research, Development and Marketing Program received full funding (\$19.9 M), and CO2 sequestration legislation was supported by the legislature.

In the Minnesota Legislature, no cap and trade bills were introduced in the 2009 legislative session; however, cap and trade proposals will likely be considered by 2010. No adverse legislation passed in 2009 regarding ND lignite facilities. Dwyer said that the Minnesota Legislature adjourned 5/18/09.

On the federal legislation level, the lignite industry supports provisions that provide funding for CO2 capture demonstration projects. The pros and cons of the Waxman-Markey bill were summarized.

Copies of a document summarizing the ND Public Service Commission's 4/17/09 Carbon Cap & Trade Summit were handed out to the LRC members.

Ballot Results re: Grant Round LXVI (66) Proposals:

Dwyer announced the results of the LRC's confidential ballots concerning recommendations for NDIC funding of the two Grant Round LXVI(66) proposals:

Grant Round LXVI (66) Grant Application LRC-LXVI-A: "Viability of North Dakota Lignite as a Feedstock for a Commercial Charfuel Coal Refining Facility in North Dakota"; Submitted by: Carbon Fuels, LLC; Principal Investigator: Lee G. Meyer; Request for: \$1,493,171; Total Project Costs: \$2,986,343; Project Duration: Nine Months:

Fund: 2 Votes. **Do Not Fund:** 19 votes.

Grant Round LXVI (66) Grant Application LRC-LXVI-B: "Application of Waste Heat Recovery Generation at Great River Energy's Coal Creek Station"; Submitted by: Calnetix Inc.; Principal Investigator: Shamim Imani; Request for: \$330,000 (\$80,000 for Step 1; \$250,000 for Step 3); Total Project Costs: \$896,745; Project Duration: 22 Months:

Fund: 20 votes. **Do Not Fund:** 1 vote.

NDIC Meeting – May 27, 2009:

Dwyer said that LRC's recommendations concerning the Grant Round LXVI (66) requests will be considered by the NDIC at its meeting scheduled for May 27, 2009.

Grant Application Deadline Date for 2009; 2009 LRC Meeting Dates:

There will be an October 1st grant application deadline date. The LRC meeting corresponding to that grant round will be held at 12:00 p.m. (Central Time) November 17, 2009, at the Best Western Doublewood Inn, Bismarck. If the NDIC approves the June 1st grant application deadline date recommended by the LRC at today's (5/19/09) LRC meeting, a meeting date/location will be scheduled.

Adjournment:

There being no further business, Dwyer requested a motion to adjourn the LRC meeting. Tom Durham so moved; seconded by Weeda. Motion carried.

Vicki Gilmore, Recording Secretary
