

Minutes of the
RENEWABLE ENERGY COUNCIL

Monday, January 22, 2018 – 2:00 p.m. (CDT)
Icelandic Room, North Dakota Department of Commerce, Bismarck, ND

CALL TO ORDER

Members Present: Jay Schuler, Rod Holth,
Randy Schneider, Mark Nisbet, Al Christianson,
Terry Goerger, David Douglas

Members Absent: None

Others Present:

Andrea Pfennig, ND Department of Commerce
Karlene Fine, ND Industrial Commission
Denise Faber, ND Department of Commerce
Bonnie Malo, ND Department of Commerce
Xiaodong Hou, University of North Dakota
Yong Hon, Clean Republic
Justin Baker, University of North Dakota
Michael Mann, University of North Dakota

Jay Schuler, Chairman, called the Renewable Energy Council meeting to order.

WELCOME AND OPENING COMMENTS

Schuler welcomed everyone.

APPROVAL OF MINUTES

October 17, 2017 meeting minutes were reviewed.

Schneider moved to approve the non-confidential and confidential minutes as presented. Nisbet seconded the motion. All in favor. Motion carried.

PRESENTATION OF FINANCIAL SUMMARY

Fine presented the financial summary, which was also posted on the website. Cash balance as of November 30, 2017 is \$5,413,777.29, minus administrative costs and project commitments, for an uncommitted cash balance of

\$2,169,260.17. We will be receiving \$3,000,000 from the Resources Trust Funds for the 2017-2019 biennium. Uncommitted dollars available for projects as of November 30, 2017, is \$4,000,277.17 for 2017-2019 biennium.

CONSIDERATION OF GRANT ROUND 35 APPLICATIONS

This was a special round in which only one application was received. It was sent to the technical reviewers for peer review.

R035-A: "Preparation of Graphene-Modified LifePO₄ Cathode for Li-Ion Battery";
Submitted by University of North Dakota;
Principal Investigator: Xiaodong Hou; Project Duration: 2 years; Total Project Costs: \$486,238; Request for: \$238,366.

Pfennig gave an overview of the project. The total amount of funds being considered today are \$242,266. For the total project costs, the 51% match comes from Clean Republic. UND has received \$98,835 of a \$148,105 award from Research ND for prior phase. The end date was extended to March 31, 2018 due to the delayed delivery of a piece of equipment.

The project objective is to prepare graphene-modified lithium iron phosphate cathode materials (LFP/G) at pilot scale of 10 tons per year.

The overall recommendations were one for funding may be considered and two to fund. The average weighted score was 185 out of 250. In terms of the achievability, all reviewers felt the project was likely achievable. One reviewer felt that effective humic acid extraction from the leonardite would be a challenging task. One reviewer felt demonstrating that high temperature drying is superior to spray drying to produce

small particles would be difficult. UND responded that their procedure is superior to spray drying because of its simplicity and cost efficiency – not because of its ability to produce smaller particles.

For the methodology, all three reviewers thought it was achievable. Again, it was stated from one reviewer they felt that effective humic acid extraction from the leonardite would be a challenging task. One reviewer felt demonstrating that high temperature drying is superior to spray drying to produce small particles would be difficult. UND responded that their procedure is superior to spray drying because of its simplicity and cost efficiency – not because of its ability to produce smaller particles.

For scientific/technical contribution, two reviewers felt the contribution could be significant, and there were also a few concerns. One reviewer felt the proposal lacked a convincing technical or economic case for a broad market appeal. UND responded that they believe that its product can successfully compete with similar materials in an open market. One reviewer felt that if the project is tethered to Clean Republic, the applicability of the innovation may be limited. However, it made sense if the intention is that Clean Republic is a launching pad to license with bigger manufacturing concerns worldwide. UND stated that they are taking a low risk strategy by starting with internal consumption in Clean Republic.

All three reviewers were comfortable with the knowledge of the project team. One reviewer noted that there was a potential gap in large-scale manufacturing. UND responded that their consultant has experience running two factories with a total annual production capacity of more than 10,000 tons.

All three reviewers were comfortable with the project management plan, and all felt the proposed equipment was appropriate.

Two reviewers felt the project had high value. One reviewer noted that the requested funds were an insignificant fraction of the project. NDSP

responded that while the funding requested is a small portion of the overall project cost, all sources of funding become important. They believe that building North Dakota's #1 soybean based biodiesel facility fits very well with the objectives of the program.

The overall comments were two reviewers felt that the project could lead to opportunities for manufacturing and development of North Dakota resources. Another reviewer felt that while the proposed work is likely achievable, technically, the economic success in the open market is unclear.

The technical advisor's recommendation is that funding may be considered. This is a relatively low risk project that has the potential to add significant value to a North Dakota resource and create additional manufacturing opportunities in the state. As a note, according to the State Geologist, North Dakota produces 30,000-130,000 tons of leonardite annually. Another product could help stabilize the market. It has the added benefit of partnering UND with a North Dakota private entity. It also appears that they have had success with earlier stages of work, and additional information would be beneficial. UND has stated that the timing of the award is important. They have assembled a strong working team and would risk idled equipment and time lost to recalibrating and retraining if they waited for the completion of the Research ND project before applying for funding from this program. This is understandable. However, it is prudent to successfully finish one state of funding before moving on to the next.

Suggested contingencies if funded are: 1) Research ND project is successfully completed prior to releasing any REP funds; and 2) If the project is not having success with materials from Leonardite Products based in Williston, the applicant will try using leonardite from American Colloid located in Bowman County. Christianson pointed out this is also available from Falkirk Mine.

Xiaodong Hou presented the project.

It was moved by Schneider and seconded by Douglas that under the authority of North Dakota Century Code 54-63-02 and 44-04-18.4 the Renewable Energy Council close the meeting to the public and enter executive session for the purpose of hearing and discussing the trade secret, proprietary, commercial and financial information that was provided as part of the “Preparation of Graphene-Modified LIFEPO4 Cathode for Li-Ion Battery” application.

All in favor. Motion carried.

Schuler stated - I remind the Council members and those present in the executive session that the discussion during executive session must be limited to the announced purpose for entering into executive session which is anticipated to last approximately 10 minutes.

The Council is meeting in executive session to discuss trade secret, proprietary, commercial and financial information that was provided by the University of North Dakota for their Grant Round 35 application. If there is any action by the Council it will occur after it reconvenes in open session.

Council members, Department of Commerce and Industrial Commission staff, University of North Dakota employees, will remain but the public is asked to leave the room.

For those of you on the phone, we will be closing this phone line and reopening a phone line. Please call in again on the confidential line/password.

The executive session will begin at 2:36 p.m. When the executive session ends, the Council will reconvene in open session.

Council reconvened into open session at 3:23 p.m.

ADMINISTRATIVE BUSINESS

Other Business – none

Renewable Energy Council members discussed the possibility of revising policy to allow for pay back of REC funds if projects are successful. It was determined to have a separate meeting to address this policy in the near future.

COMPLETION OF BALLOTS

R035-A: “Preparation of Graphene-Modified LifePO4 Cathode for Li-Ion Battery” with contingencies.

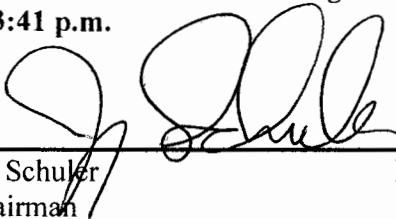
Contingencies include:

- The Research ND project is successfully completed prior to releasing any REP funds.
- If the project is not having success with materials from Leonardite Products based in Williston, the applicant will try using leonardite from American Colloid located in Bowman County and Falkirk Mine.

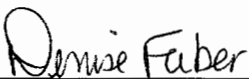
Fund: 7 No: 0

ADJOURNMENT

Schneider moved to adjourn the meeting. Douglas seconded the motion. All in favor. Motion carried. The meeting was adjourned at 3:41 p.m.

 4.9.18

Jay Schuler Date
Chairman

 4/9/18

Denise Faber Date
Acting Recorder