Minutes of the
RENEWABLE ENERGY COUNCIL (REC)
Wednesday, March 30, 2022
9:00 a.m. (CT)
TEAMS Meeting via conference/video call
ONSITE location 14th Floor Conference Room – Bismarck Capitol

Members Present	Staff Present	Guests Present
James Leiman		Glenn Hauck
Gerald Bachmeier	Karlene Fine, NDIC	Eathan Gumke
Al Christianson	Rich Garman, Commerce Dept.	Bill Gallagher
Terry Goerger	Sherri Frieze, Commerce Dept.	Ryan Carter
Tony Grindberg		Ryan Thorpe
Rodney Holth		

WELCOME AND OPENING COMMENTS

Chairman Leiman called the Renewable Energy Council (REC) meeting to order at 9:00 a.m.., welcoming members and guests in the conference room and on TEAMS video/audio platform.

APPROVAL OF MINUTES

It was moved by Christianson and seconded by Bachmeier to approve the September 22, 2021, meeting minutes. The motion carried unanimously.

PRESENTATION OF FINANCIAL STATEMENT

Karlene Fine presented the financial report that had been posted on the Industrial Commission/Renewable Energy program website. As of February 28, 2022, the uncommitted funds for the current biennium are $3,505,609.39

REPORT ON GRANT ROUND 49 APPLICATIONS

Nine applications were received, six were not appropriate to move forward and the three sent to Technical Reviewers for peer review. One project came back as a do not fun and the other two applications will be reviewed today for the Council's consideration. Rich Garman, of the Commerce Department, presented the Grant Round Requests.

CONSIDERATION OF SPECIAL GRANT ROUND 49 REQUESTS

R-049A - "MSC™ High Protein Project"
Principal Investigator: Ryan Carter, General Manager
Project Duration: 21 months
Requesting: $500,000
Total Project Cost: $80,322,468

Project's Objective
To assist GP Turnkey Tharaldson, LLC, a new joint venture with Green Plains, Inc. and Tharaldson Ethanol Plant I, LLC, with the integration of the MSC™ High Protein Project. The project is designed to implement equipment to generate a high-grade protein product from whole stillage that will trade at a value substantially higher than distiller's dried grains with solubles. (DDGS)

Reviewers' Ratings
- Fund – 228/250
- Fund – 209/250
- Average Weighted Score – 218.5 250

Achievability
All reviewers felt the methodology was above average.
One reviewer felt this first-time installation in North Dakota has been implemented elsewhere and there are plans to review these prior to commissioning. One reviewer commented that the business, facility, process, resources, and

expected results are relatively well described. Detailed technical descriptions of MSC™ technology is not provided, but not critical information.

Methodology
All reviewers felt the methodology was above average.

Technical Contribution/Knowledge
All three reviewers felt the scientific/technical contribution could be significant. The first-time installation in North Dakota has been implemented elsewhere and there are no plans to review prior to commissioning. The business, facility, process, resources, and expected results are relatively well-described.

Project Management
All reviewers were comfortable with the management plan. One reviewer stated the proposal outlines current individual responsibilities with the installation along with ensuing operational responsibilities. Another reviewer stated that project management plan is generally well-defined, the exception being the lack of detailed communications plan with subcontractors, which is not necessary.

Value of Budget
All reviewers felt the budget was well defined.

Overall Comments from Reviewers
- Innovation in the ethanol industry has been rather slow over the years. This MSC™ High Protein Project provides many benefits to the State of North Dakota.
- The proposed project will provide additional income to a critical biorefinery, high-quality feed for the state's livestock industry, additional feedstock for the biomass-based diesel, and even more secure market for North Dakota corn.

Technical Advisor Recommendations
- This project supports all 6 goals and purposes set forth by the North Dakota Industrial Commission.
- This project also meets the additional goals and objectives cited with investment, job creation, preservation of production, new technology, maximization, no additional environmental impact and taking the lead that may be followed by other ethanol plants.

Suggested Contingencies if Funded
- Consider careful review of the project schedule as it seems optimistic and aggressive.

Ryan Thorpe presented the deck slide regarding GP Turnkey Tharaldson LLC (The presentation is available in the Industrial Commission files.)

In response to a question, the distilling process will run over to the joint venture system, wash, increase the protein by a small amount and the process increase of protein will come back to the plant. The plant will still have corn oil production, ethanol, and normal DDGS, but it will be 3.5 pounds per bushel less of the normal distillers and 3.5 pounds per bushel of the high distillers will be made.

In response to a question, the water currently being used by the plant is 1 million gallons a day. The process will not increase or decrease the amount of water needed in a day; it will just be used to move in different directions.

In response to a question, the water being used currently from the City of Fargo is for washing purpose and separation of molecules. The water volume will not increase but will add value to the plant. From 1 million gallons of water that is being used, 30-40,000 gallons will go back to the City of Fargo.
In response to a question, the processing of the water will neither positively or negatively change the quality of the water.

In response to a question, all end users are wanting to look at it, but need a consistent supply, all the product that we produce will be relatively the same, giving the end users an endless supply.

In response to a question, long term agreements are already in place.

R-049D -"Front End Engineering and Design (FEED) Study for Creosote Treated Railroad Tie
Submitted by: Great River Energy – Spiritwood Station
Principal Investigator: Glenn Hauck
Project Duration: 5 months
Requesting: $66,500
Total Project Cost: $133,000

Project's Objective
Great River Energy (GRE) is evaluating low carbon intensity fuel source at its Spiritwood Station located in Spiritwood, North Dakota. Due to the upcoming sale of Coal Creek Station, GRE desires to evaluate fuel availability, fuel costs, and the capital costs of converting the boiler, fuel handling system, and ash handling system to replace coal with biomass, specifically creosote treated railroad crossties. (CTRT).

Reviewers' Ratings
- Fund – 171/250
- Fund – 161/250
- Fund – 197/250
- Average Weighted Score – 176.3/250.

Achievability
All reviewer's felt the project was achievable. One reviewer felt the schedule was achievable since this was a high-level evaluation. One reviewer expressed some concern regarding potential pandemic delays. One reviewer was concerned regarding the amount of time allocated to review and comment periods is too aggressive.

Methodology
All three reviewers felt the methodology was at above or above average. One reviewer noted the expertise in the engineering firm as contributing to the solid methodology. Another reviewer believes that the methodology is adequate, but not outstanding.

Technical Contribution/Knowledge
All three reviewers felt the contribution and knowledge was better than average. One reviewer noted the engineering firm had significant experience. One reviewer felt that Mr. Hauck's specific experience with refuse-based fuel boilers offers unique experience to the project. One reviewer felt that GRE extensive boiler operation experience paired with

the design engineers should provide a "better than average solution to the engineering project.

Project Management
All reviewers felt the management plan would be adequate or very good. One reviewer felt the engineering firm was capable of managing the project. One reviewer felt there should be provisions for interim reports. One reviewer felt the work was well defined but noted there should be feedback to the REC after each phase of the study was completed.

Value of Budget
All reviewers had mixed reviews, but noted no issues, as no equipment was to be purchased.

Overall Comments from Reviewers
- One reviewer had concerns that the proper measures would need to be taken to assure the toxicity of burning railroad ties could be effectively managed with population control equipment in place at the plant.
- One reviewer recommended that this project be funded at the level proposed. The project prepares usable deliverables that have a defined fixed scope to judge further investment in the Spiritwood Station.
- One reviewer suggested that while the project as proposed has limited application, it has the potential to provide a pathway for future low to modest cost energy to support two agricultural processing plants that provide benefit to the State of North Dakota.
- One reviewer had concerns regarding the supply chain and availability of the railroad ties to the project for fuel.

Technical Advisor Recommendations
- It was recommended that the investigators perform proper due diligence on the fuel supply topic and verify a consistent supply of railroad ties for fuel.
- It is recommended that the investigation perform proper due diligence to ensure that proper environmental controls are in place to minimize any toxicity that may be released in the burning of the railroad ties.

Suggested Contingencies if Funded
- Design, schedule, and logistic concerns.
- It is recommended that due diligence be performed and answers to the following questions be submitted
    1. Will this fuel blend negatively affect fly ash makeup?
    2. What will the disposition of th ash be?
    3. Will this design negatively affect the metallurgy of the furnace?
    4. Schedule seems optimistic, care should be taken in making sure schedule is achievable and that there is adequate time for review.

Glenn Hauck presented PowerPoint slides on the project. (A copy of the presentation is available in the Industrial Commission files.)

In response to a question, a combustion report was conducted on the current air permit limits with a 10 percent reduction introduced for operation of the boiler. The report concluded that GRE could operate within the 10 percent error, while burning 100 percent CTRTs. In response to a question, burning of CTRTs has been done before at other facilities, meeting air quality permits. When burning within a boiler system and combustion controls, air quality standards should be able to be met within permitting standards.

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ADMINISTRATIVE BUSINESS

Report from Clean Sustainable Energy Authority (CSEA) Renewable Energy
Al Christianson

Al Christianson informed Council members about North Dakota's Clean Sustainable Energy Authority (CSEA) that he sits on as a voting member. The authority was established by the Legislature in 2021 under the control of the North Dakota Industrial Commission to enhance the production of clean sustainable energy, to make the state a world leader in the production of clean sustainable energy, and to diversify and grow the state's economy.

For the 2021-2023 biennium, the program received an appropriation of $25 million for grants and the authority to request a line of credit from the Bank of North Dakota for up to $250 million.

CSEA has eight voting members, eight non-voting members, and Lt. Governor chairs the authority.

COMPLETION OF BALLOTS

R-049A – "MSC™ High Protein Project"
Project Duration: 10 months
Requesting: $500,000
Total Project Costs: $ 80,322,468
Conflict of Interest: none
Fund : 6 Do Not Fund: 0 Abstain: 0

R-049D – "Front End Engineering and Design (FEED) Study for Creosote Treated Railroad Tie"
Project Duration: 24 months
Requesting: $66,500
Total Project Cost: $133,000
Conflict of Interest: Al Christianson
Fund: 5 Do Not Fund: 1 Abstain: 0

No contingencies were added to the ballots, members felt all questions were answered by the presenters.

ADJOURNMENT

Motion made by Christianson and seconded by Bachmeier to adjourn the meeting. Chairman Leiman adjourned the meeting at 10:30 a.m.

Josh Teigen
Chair