

Minutes of a Meeting of the Clean Sustainable Energy Authority
Held on December 14, 2021 at 8:45 a.m.
Pioneer Room, State Capitol

Present: Lt. Governor Brent Sanford, Chair
Jim Arthaud
Joel Brown
Al Christianson
Christopher Friez
Terry Goerger
Robert (Mac) McLennan
Kathy Neset
Tom Erickson
Lynn Helms
Justin Kringstad
James Leiman
Rachel Retterath
Todd Steinwand
John Weeda

Also

Present: As this was a Teams event a listing of attendees is not available

Lt. Governor Sanford called the meeting of the Clean Sustainable Energy Authority (CSEA) to order at 8:45 a.m. with a quorum being present.

It was moved by Brown and seconded by McLennan that the revised December 14, 2021 agenda be approved as presented. The motion carried unanimously.

It was moved by Neset and seconded by Friez to approve the September 17, 2021 meeting minutes as presented. The motion carried unanimously.

Ms. Karlene Fine, Industrial Commission Executive Director/Secretary, provided a financial summary as follows.

**Clean Sustainable Energy Fund
Financial Statement - Cash Balance
2021-2023**

December 8, 2021 CSEA Technical Committee Meeting

	Cash Balance
July 1, 2021 Beginning Balance	\$25,000,000.00
Interest Income through October 31, 2021	\$2,109.59
Other revenues through October 31, 2021	\$0.00
Total Revenues	<u>\$2,109.59</u>
Grant Awards	\$0.00
Administrative Expenditures through October 31, 2021	<u>\$431.92</u>

Total Expenditures		\$431.92
Cash Balance as of October 31, 2021		<u>\$25,001,677.67</u>
<hr/>		
Outstanding contracted Project Commitments	\$0.00	
Estimated administrative expenses for 2021-2023 biennium	<u>-\$50,000.00</u>	
		<u>-\$50,000.00</u>
Non-committed Cash Funding		\$24,951,677.67
<hr/>		
Known and Potential Revenues for 2021-2023 Biennium		
General Fund (House Bill 1452)	\$25,000,000.00	
Federal Funds.State Fiscal Recovery Fund - hydrogen development grants (Senate Bill 2345, subsection 36)*	\$20,000,000.00	
Interest & Other Income	<u>\$25,000.00</u>	
		<u>\$45,025,000.00</u>

*There is appropriated from federal funds derived from the State Fiscal Recovery Fund, not otherwise appropriated, the sum of \$20,000,000, or so much as may be necessary, to the Industrial Commission for the purpose of providing **hydrogen development grants**, as approved by the Clean Sustainable Energy Authority, for the period beginning with the effective date of this Act, and ending June 30, 2023. The effective date of the Act was December 1, 2021

Lt. Governor Sanford stated that Senator Dale Patten and Representative Glenn Bosch, sponsors of House Bill 1452, provided a legislative perspective on the CSEA program to the CSEA Technical Committee at their December 8 meeting. Following the meeting they provided the following summary of their comments:

1. *The project should be game changing or a precursor to game changing technology and/or concepts.*
2. *The proposed project should have relevance to the industry, not just an individual company.*
3. *It should not be just a capital injection to the company requesting the grant/loan.*
4. *It should result in or lead to commercialization of existing research or concepts.*
5. *The CSEA does not have to give out all of the money available in the first round.*
6. *The funding should target A grade type projects. We do not want it to be a stretch of the guidelines or legislative intent to fund a project.*
7. *The technical review committee should help determine if the project is technically feasible and financially viable. It can provide input regarding compliance with the intent of the law.*
8. *The CSEA voting board should not be a rubber stamp of the work done by the technical review committee. They should ask the hard questions and ultimately make the determination of the ability of the proposed project to achieve the goals of the CSEA as intended by the legislature.*

9. *If a project is rejected because it does not help achieve the goals of the CSEA it will help send a message to future applicants regarding what will be considered in successful applications.*
10. *Both the technical review committee and the voting CSEA board should be looking for ways the existing legislation can be improved in the next legislative session.*
11. *The goal of the funding of the projects is to ultimately make ND energy competitive with other energy sources from a marketability, production, price, carbon footprint, emissions, reliability, resilience, etc. standpoint.*
12. *If the energy markets want to buy energy with a reduced carbon footprint we want to be able to sell them that type of energy from all of our energy sources.*
13. *If the proposed project is also utilizing other state resources, that should be considered in the recommendation. Other sources of state funding should be complimentary in nature not redundant. The total scope of state funding can be considered.*
14. *Availability of federal funding should and can be considered in both approval and level of approval of CSEA funding.*
15. *Timeliness of the use of grants/loans is important.*

Lt. Governor Sanford asked that the CSEA members declare if they have any conflicts of interest and hand in their forms. Mr. Al Anderson, CSEA Director, stated that a conflict of interest exists for an Authority member if there is a monetary or material investment or interest in a project submitted for Authority consideration, such as employment or individual investment. If a conflict of interest exists, then the member must disclose the nature of the conflict of interest prior to any vote by the Authority in consideration of the application. A motion must be approved to allow members with conflicts of interest to vote. At the Technical Committee level there were three conflicts: Tom Erickson, Rachael Retterath and Todd Steinwand.

Mr. Erickson stated his conflicts were

- C-01-01: EERC has been a resource for the applicant, but the EERC has no financial involvement in this project. The EERC is working with the applicant on a separate project that was authorized by the Legislature
- C-01-03: no financial involvement, but the applicant is considering investing a very small amount in the PCOR program.
- C-01-05: have done work for Marathon in the past and continues to do so but is not involved in this particular project
- C-01-08: The EERC is directly involved in the proposal and would have a role in the subsurface characterization and permitting part of the project.
- C-01-09: the EERC is the applicant and is directly involved in the research work.

At the Technical Committee meeting he abstained from voting on C-01-09.

Ms. Retterath stated that any conflicts she may have would be because of employment. Regarding the C-01-08 application her employer, Great River Energy, is the majority owner of the companies within Midwest AgEnergy Group. Regarding the C-01-09 application her employer, Great River Energy, is the current owner of Coal Creek Station and she may also be working with Rainbow Energy Center in the future. Mr. Steinwand stated that he is not sure it is a conflict but is disclosing that the Bank of North Dakota has a loan with Midwest AgEnergy Group as a result of the BND Disaster Recovery Loan program.

The following statements of conflicts were made:

Al Christianson stated he has a conflict on the C-01-08 application. He is on the Board of Directors of Midwest AgEnergy and the company he works for owns a majority of Midwest AgEnergy. Regarding the

C-01-09 application he is an employee of Great River Energy and is working diligently on the transfer of ownership of Coal Creek Station.

It was moved by McLennan that Mr. Christianson be precluded from voting on the C-01-08 and C-01-09 applications. The motion died for lack of a second.

It was moved by Goerger and seconded by Arthaud that Christianson be allowed to vote on the C-01-08 and C-01-09 applications. On a roll call vote Arthaud, Brown, Friez, Goerger, McLennan, Neset, Lt. Governor Sanford voted aye. Christianson abstained. No one voted no. The motion carried.

Mr. Chris Friez stated he has three potential conflicts of interest: Regarding the C-01-01 application there is a not a direct conflict but Basin Electric which is involved in the project is a customer of his employer, North American Coal; C-01-08 his employer, North American Coal, does own a small minority interest in Midwest AgEnergy; and in C-01-09 his employer, North American Coal, is the fuel supplier to Coal Creek Station.

It was moved by Brown and seconded by Arthaud that Friez be allowed to vote on C-01-01, C-01-08 and C-01-09 applications. On a roll call vote Arthaud, Brown, Christianson, Goerger, McLennan, Neset, Lt. Governor Sanford voted aye. Friez abstained. No one voted no. The motion carried.

Mr. Joel Brown stated he has marked two don't know if he has a direct conflict but in the interest of being fully transparent, on C-01-01 the Bakken Energy application the principle of the company for which Mr. Brown works is a minority investor in that project and on C-01-10 his employer has been in discussions with the applicant for the possibility of being a lender. For neither of these applications is his compensation or his employment at any risk.

It was moved by Friez and seconded by Neset that Brown be allowed to vote on the C-01-01 and C-01-10 applications. On a roll call vote Arthaud, Christianson, Friez, Goerger, McLennan, Neset, Lt. Governor Sanford voted aye. Brown abstained. No one voted no. The motion carried.

Mr. Jim Arthaud stated that regarding application C-01-05, Marathon is a customer of his company.

It was moved by Neset and seconded by Friez that Arthaud be allowed to vote on the C-01-05 application. On a roll call vote Brown, Christianson, Friez, Goerger, McLennan, Neset, Lt. Governor Sanford voted aye. Arthaud abstained. No one voted no. The motion carried.

Ms. Neset stated that on application C-01-01 she has a minor financial interest with no operational decision making; on C-01-07 she stated that she has done some consulting work for the applicant.

It was moved by Christianson and seconded by McLennan that Neset be allowed to vote on the C-01-01 and C-01-07 applications. On a roll call vote Arthaud, Brown, Christianson, Friez, Goerger, McLennan, Lt. Governor Sanford voted aye. Neset abstained. No one voted no. The motion carried.

Mr. Goerger, Mr. McLennan and Lt. Governor Sanford did not have any conflicts.

Mr. Anderson reviewed the process that all the applications had gone through and provided a summary of the Technical Committee recommendations. He noted that 10 applications had been received; 1 application was eliminated because it did not meet the intent of the statute, and 2 applications dropped out during the process. He thanked the individuals from the Industrial Commission staff and the Bank of North Dakota

staff that had been part of this process for all their hard work. He particularly thanked the CSEA Technical Committee members for their work in reviewing all the applications and technical reviews and financial evaluations. He noted that there had been some lessons learned during the process and there will be some changes made regarding how the confidentiality of records will be handled. He also noted that the CSEA Technical Committee had focused on their legislative directive to determine the feasibility of the project and with their contingencies suggested that if the project was a pilot the financial assistance should a grant; if it is a large development or commercialization project of truly new technology it could be both a grant and a loan. But if it is only commercialization then the intent would be to provide financial assistance in the form of a loan. A copy of the summary is available in the Industrial Commission files.

Lt. Governor Sanford called on Mr. Anderson to give a summary of the application and the comments from the reviewers.

C-01-05 – Vapor Recovery Units to Capture Fugitive Gas Emissions from Oil & Gas Locations; Submitted by Marathon Oil Company; Duration: 1 year; Total Projects Costs: \$6.4 million; Amount Requested: \$3.2 million (grant).

The proposed project is to purchase a fleet of 32 Vapor Recovery Unit's (VRUs) that will be installed on applicant operated oil and gas production facilities. In a typical facility, low-pressure gas that is processed by the production equipment is not an acceptable pressure to be sent into the third-party natural gas sales system. The project has the potential to eliminate over 1 BCF/year of natural gas flaring for each year they are in operation.

The project is technically sound, achievable and meets the requirements of the program. VRU's are commercially available but additional attention is required to operate in a cold climate. The applicant has already gained experience with rental equipment and the project is likely achievable from both a technical and market approach. The contribution is potentially extremely significant in improved emission reduction and the project management plan is adequate with the team's experience although some additional detail with specific schedules, dates and costs would help overall scoring.

The work is not unique and does not address the scale-up technology demonstration need for the entire ND well inventory. Some effort to improve the performance or efficiency of this technology or drive down the cost of deployment would better justify the use of CSEA funding.

CSEA funding is not needed to promote the use of this technology and the result could be that every oil company applies for similar flare mitigation equipment funding.

The proposed technology is commercially available from multiple vendors and with applicant's experience is likely achievable from a technical and market approach. The partnerships are adequate for short and long-term success in deployment, reducing emissions and can be delivered in a 1-year timeframe demonstrating program success.

The \$3.2M grant request is 50% of the project (\$6.4M) cost with the remainder coming from the applicant.

A presentation was made by Mr. Zac Weis and Mr. Jeff Parker with Marathon Oil Company for C-01-05 – Vapor Recovery Units to Capture Fugitive Gas Emissions from Oil & Gas Locations. A copy of the PowerPoint presentation is available in the Industrial Commission Office.

The CSEA discussed the following points with the applicant:

- How the calculations were determined on the proposed emissions reductions.
- Number of VRU's currently being used in the Basin (Mr. Helms noted that this is something that is not being tracked.)
- Estimated payout on the VRU's – impacted by the gas contracts.

- Focus on emissions and demonstration of value in the Williston Basin; Important to have a demonstration done in North Dakota to especially deal with the winterization aspect of these VRU's.
- Potential impact of federal regulations – this could be critical infrastructure in the future.
- CSEA Technical Committee recommendation was for a loan because this project fits into the category of commercialization.
- Consensus was that this is a good project and Marathon was commended for doing this type of work.

Mr. Anderson gave a summary of the C-01-08 application and the comments from the reviewers:

C-01-08 – Commercial Deployment of Carbon Dioxide Capture & Geological Sequestration in McLean County; Submitted by Midwest AgEnergy Group; Project Duration: 18 months; Total Project Costs: \$58.8 million; Amount Requested: \$5.2 million (grant).

The project is to capture and permanently sequester the CO₂ stream associated with an ethanol biorefinery. The production of renewable fuels has had a marked impact on the economy of ND and these facilities provide a value-added market to agricultural producers. There are numerous markets for biofuels that have aggressive carbon reduction goals. This translates into a financial opportunity for renewable fuel producers who can reduce the carbon intensity of the fuel they produce. Success in such an endeavor would ensure market access and enhance the financial stability of existing biorefineries.

The project is a technically sound, low-risk and high-impact decarbonization activity that is important to ND's economy. The proposed CO₂ sequestration will improve competitiveness and continued operation. The commercial-scale project relies on well-proven technology and has an overall low project risk. The methodology is well developed and the quality of the project partners high. There were some comments on ambitious budget with current supply chain issues and inflation.

The project is not new in industry with other similar projects moving forward at other biorefineries.

CSEA funding is not needed to promote the use of this technology as the commercial process is already underway at a similar biorefinery.

The proposed technology is well-proven and with the well-developed methodology and strong, highly skilled team, the likelihood of achievable results in the planned (18 mo.) timeframe is high.

The \$5.2M grant request is only 8.85% of the project (\$58.78M) cost with the remainder coming from the applicant.

A presentation was made by Mr. Adam Dunlop with Midwest AgEnergy Group for C-01-08 – Commercial Deployment of Carbon Dioxide Capture & Geological Sequestration in McLean County. A copy of the PowerPoint presentation is available in the Industrial Commission Office.

The CSEA discussed the following points with the applicant:

- How the applicant determined the basis value of a bushel of corn stated in their application and what market was utilized in that calculation. How will this project bring more value to the farmer? Is there the chance that the California low carbon market will have an oversupply? Are there other low-carbon markets opening up?
- It was noted that this project when fully completed may allow for greater opportunities for other fuels and other chemicals for those customers that want a lower CO₂ product in the future.
- It was stated that this project may make the ethanol industry more sustainable.
- There was discussion on the amount of CO₂ that will be captured and injected underground.

- This project will help prove that there is geology (saline formations) available for CO2 injection permanently and safely in McLean County. The prior work that was partially funded by the Lignite Research Council is available for the public.
- Reviewed the funding that had been provided too date from the State – Lignite Energy Council provided funding; as part of a Great River Energy application, a 3d seismic operation, was funded; and currently there is a Renewable Energy Program funding for 2d seismic operation in Stutsman County.

Mr. Anderson gave a summary of the C-01-07 application and the comments from the reviewers:

C-01-07 – Unlocking the Full Potential of Produced Water as a Key Component of Clean Sustainable Energy; Submitted by Wellspring Hydro; Duration: 5 – 8 months; Total Project Costs: \$2.2 million; Amount Requested: \$1.1 million (grant).

The project would utilize a unique feedstock from oilfield brines (produced water) that presently is treated and injected into disposal wells in ND. If successful, the applicant will produce three commercially essential commodity products and lithium in ND that will aid in diversification of the economy and bolster existing industries through lower prices while reducing waste and harmful emissions. ND currently produces about 1.6 MBPD of water.

The project was rated as technically good and would impact ND produced water and the economy. There is a huge hurdle in pushing current technology to handle the ND produced water feed, but the team has the necessary engineering and technology vendors in place to achieve the short-term goals of the studies and design. The project management plan was clear, understandable, and notably good; however, overall scoring could have been higher with more involvement from strategic customers and distributors of chemicals. There was some concern around the input costs and sourcing of limestone.

This facility would be the first of its kind dealing with ND produced water and if successful would not only start a new business but generate useful products out of a waste stream that currently needs to be injected. Concerns were identified with the high mineralization of ND produced water and the expected new waste streams (residual) and disposal requirements. This can be handled in the permitting process and identified as a contingency.

The successful completion of this project would result in only a single facility and some concerns were identified with replication across the state and need for strategic customers/chemical distributors.

This pilot/commercial endeavor can be completed within an 8-month timeframe providing results and metrics to demonstrate program success and a unique solution to an environmental issue.

The \$1.1M grant request is 50% of the project (\$2.2M) cost with the remainder coming from the applicant.

Presentation was made by Mr. Steven Kemp, Mr. Mark Watson & Mr. Mat Hirst with Wellspring Hydro for C-01-07 – Unlocking the Full Potential of Produced Water as a Key Component of Clean Sustainable Energy; a request for a \$1.1 million grant. A copy of the PowerPoint presentation is available in the Industrial Commission Office.

The CSEA discussed the following points with the applicant:

- The value of the caustic soda produced from this project will be a significant benefit to the processes used for CO2 capture and storage particularly in having the product readily available. Also, there will be a savings in the costs of the product because it is being produced right here in North Dakota.
- This project will be utilizing technologies that have been proven in a new way to produce products that are needed in the North Dakota energy development.

- Safety should also be an attribute of this project -- feedstock is local to be used in a regional area-- reducing the transportation aspect.
- These dollars will be used for the next step of developing the plans to build a facility.

Mr. Anderson to give a summary of the next application and the comments from the reviewers:

C-01-03 – Cerilon GTL; Submitted by Cerilon GTL ND Inc; Project Duration: 5 years; Total Project Costs: \$2.8 billion; Amount Requested: \$10 million (grant) \$50 million (loan).

The proposed Gas to Liquids (GTL) plant will utilize 240 MCFD of natural gas inside of ND to convert to high value products. This will help to ensure ND oil production can continue and will not be constrained by lack of local customers of gas and constraints in pipeline infrastructure to move gas to distant customers. The proposed GTL facility recycles natural gas into products that are more green and environmentally friendly. The GTL facility will do carbon capture and underground sequestration to capture up to approximately 2 million tons of CO₂/year.

This project has an excellent potential as a demonstration of both GTL technologies as well as the utilization of carbon capture and sequestration to avoid emissions. The GTL portion of the project utilizes well known technology and has an excellent team and vendors who can guarantee performance. Consequently, this portion is technically feasible, additional material would be beneficial regarding the CO₂ sequestration portion of the project to justify its feasibility.

Establishment of a GTL facility in ND with a CCUS portion would make a significant impact in the state. This is relevant to ND's energy future to maintain a balance of fossil fuel extraction and sustainability.

The size of the facility will impact the overall oil and gas industry with its significant use of natural gas in the future as the state's GOR increases. Although not totally "green" energy, the fuels will have significantly lower sulfur emissions (GHG) and CO₂ sequestration.

The size and complexity of this project makes it have a 5-year timeframe.

The \$10M grant request and \$50M loan request are just 2.1% of the project (\$2.8B) cost. The early project timing (FEL 1-3) where the state dollars would be used are 59% of the early project cost (\$102M) with the remainder coming from \$2.4M private and other funding sources. The most significant risk highlighted was the need for more privately secured funds earlier in the project. Consequently, a contingency of a 1:1 match with private funding was recommended for the grant.

A presentation was made by Mr. Nico Duursema and Mr. Ron Opperman with Cerilon GTL ND Inc for C-01-03 – Cerilon GTL. Copies of the materials distributed at the meeting are available in the Industrial Commission Office.

The CSEA discussed the following points with the applicant:

- In response to how North Dakota stacks up with other basins across the United States it was indicated that the Bakken has the feedstock and pore space.
- There will be opportunities to develop even more products (including hydrogen in the future) once the plant is in place. There is considerable flexibility to develop more products.
- The plant facility site will be 14 miles in size.

The CSEA members took a short break to get their lunch and then the Authority will reconvene for a working lunch.

Lt. Governor Sanford called the meeting back to order and asked Mr. Anderson to give a summary of the next application and the comments from the reviewers:

C-01-09 – Front-End Engineering and Design for CO2 Capture at Coal Creek Station; Submitted by EERC; Project Duration: 18 months; Total Project Costs: \$15,065,200; Amount Requested: \$7,532,600 (grant).

Carbon capture and storage is vital to continued operation of Coal Creek Station and is an important step toward the goal for the state to reach carbon neutrality by 2030. Implementing carbon capture technology allows fossil fuels to continue to meet the nation's energy demand, while also reducing CO2 emissions. The proposed FEED study is the next step in a due diligence process in project development and is intended to assist in securing financing for CO2 capture at Coal Creek via the 45Q tax incentive program of the Federal Government.

The project is technically good and its goals were very clear with an objective to complete a FEED study for a CO2 system (CCS) that would capture 95% of CO2 emissions. The organizations and project leads have the technical qualifications and competence that were deemed exceptional. The facilities and equipment were notably good and the partners are leaders in CCS technology development construction and facility operation.

The project is the next step for the lignite industry and if it moves forward commercially, the technology would positively impact all ND energy industries. The technology is slightly different than project Tundra but provides an alternative solution and has been supported by Lignite Research Council funding (Pre-FEED).

Carbon capture in ND power plants is critical and significant to sustaining and growing the economy and optimizing the use of ND resources. Exploring all options with regards to CO2 sequestration is critical to the lignite industry. Consequently, additional sensitivity analysis with regards to economic evaluations and measurable standards of success will be needed for other CO2 emission sites.

The likelihood that the project will achieve the technical goals is most likely achievable and within an 18-month timeframe.

The \$7.533M grant request is 50% of the project (\$15.065M) cost with the remainder provided by the plant owner. The only condition was that the grant approval be linked to the completion of the sale between Rainbow Energy Center and Great River Energy.

Presentation was made by Mr. Jason Laumb with the EERC and Mr. Stacey Tschider, President, Rainbow Energy Center for C-01-09 – Front-End Engineering and Design for CO2 Capture at Coal Creek Station. Included in the presentation was information on the regulatory hurdles that remain but Mr. Tschider stated their commitment to get the acquisition of Coal Creek completed and are excited about the future opportunities for the project. A copy of the presentation is available in the Industrial Commission Office.

The CSEA discussed the following points with the applicant:

- In response to a question, it was stated that this baseload plant is important to North Dakota and nation and recognized that there are other value-added opportunities in the future for the Coal Creek facility. There is no better asset in North Dakota.
- With the carbon capture portion and the addition of renewables of this proposed project this plant will be carbon neutral in the future. The goal is to take this plant to the next level – it will be a win, win for everyone.
- There was discussion regarding the targets that have been set in Minnesota for carbon neutral electrons. It was noted that there will need to be an effort for education and getting information to the citizens of Minnesota of the work that is being done to create carbon neutral electrons. Work is being done to establish a threshold value for carbon neutral.

- There are three parts to a capture storage project; the first part the pre-FEED has been done; the pipeline part has not been undertaken and the storage facility. Preliminary modeling by EERC has been done to determine where to sequester the carbon in the area but there is more work to be done on this aspect of the capture storage. Three storage horizons have been identified.
- In response to a question, it was indicated that there have been discussions about joint ventures for storage but this has to be approached carefully.
- In response to a question, Mr. Tschider stated they were willing to provide their match funding in advance of the Coal Creek sale to keep the project moving forward.

Mr. Anderson gave a summary of the next application and the comments from the reviewers:

C-01-10 – Solving North Dakota Flaring: Mobile Flare Gas Capture & Fueling Platform Expansion; Submitted by Valence Natural Gas Solutions; Project Duration: 1 year; Total Project Costs: \$44 million; Amount Requested: \$2.5 million (grant. This project proposes expansion of proprietary Flare Gas Capture (“FGC”) and natural gas fueling platform in North Dakota.

The applicant is proposing to accelerate deployment of its fleet of mobile flare gas capture plants. The company is proposing to invest an additional \$44M by year-end 2022 in its established equipment fleet and service platform to enable the capture of 24.5 MMCFD by 2023 of ND natural gas that would otherwise be flared representing approximately 10% of the average 2021 YTD statewide total of approximately 245 MMCFD.

The project is technically sound, the budget is reasonable and well thought out. The project management plan is clear, adequate, and well presented. The background and experience of the principals is relevant and there are no concerns with implementation. The partnerships are in place for vendors and suppliers.

The applicant’s approach appears to be a step change in optimization of gas capture. However, the expansion of a single business currently in operation is not a revolutionary development and is not the implementation of a new non-commercialized technology.

Expansion of the business model will have a positive impact on the capture of natural gas and is basically a way to expedite capital deployment linked to associated gas capture. Current gas flaring is around 6% of production with about 2% associated with stranded wells.

The applicant’s plan is comprehensive and can be implemented in a 1 year timeframe making the returns quantifiable.

The \$2.5M grant request and \$15M loan request is 40% of the project (\$43.9M) cost. \$19M is being provided by the applicant with \$7.3M coming from other sources. The project is feasible and the recommendation was to not fund a grant but consider funding a loan.

Presentation was made by Mr. Stewart Wilson with Valence Natural Gas Solutions for C-01-10 – Solving North Dakota Flaring: Mobile Flare Gas Capture & Fueling Platform Expansion. A copy of the presentation is available in the Industrial Commission Office.

The CSEA discussed the following points with the applicant:

- Regarding mobility, the big plants will take 12 – 18 months to be built and can be moved from site to site in 6 to 10 days; everything is on wheels. It is designed to be mobile which makes it more useful. Midsized plant would be just the two trailers.
- The cost differential from what is currently being done to what is proposed is eliminating the waste and most of that waste was the lack of mobility and the need to customize every site.

- Regarding the amount of gas flaring that was depicted on one of the charts, it was indicated that North Dakota is more transparent with their information.
- It was noted that if the waste issue is solved it will unlock more oil production.
- There currently has been some seasonality to the gas capture being used on the well site.
- There was discussion about the impacts and opportunities with having a natural gas trunk line moving from west to east.

Mr. Anderson gave a summary of the final application and the comments from the reviewers:

C001-01 – Dakota H2 Hub; Submitted by Bakken Energy LLC; Project Duration: 2021-2027; Total Project Costs: \$1.75 billion; Amount Requested: \$10 million (grant) – a letter has been received to increase the grant amount to \$20 million based on recent legislative action; \$100 million (loan).

The purpose of the Dakota H2 Hub is to establish one of the largest and the lowest cost clean hydrogen production hubs in the country in the shortest amount of time, continue employment of the Synfuels Plant jobs, become a center of innovation and economic development, reduce site CO2 emissions by 6 million tons/yr. and put ND on a path to permanently solving its natural gas flaring problem.

The use of an existing site at the Synfuels plant is a strong positive aspect with regards to costs, the proposed technology is well known, and the project was viewed as technically sound. The quality and clarity of the methodology was average and could have scored higher with additional information around the carbon capture and storage facility plans. The facilities and equipment available were notably or exceptionally good due to the repurposing of an existing facility. The budget was most likely sufficient, and the strategic partnerships are adequate to exceptional.

There would be a significant impact to ND's economy, not only in avoiding the potential shuttering of the DGC facility but in the development of a major hub of clean hydrogen production regionally, and even nationally. As carbon intensive energy production is declining in the state and around the nation, this would be a transformative response to the demand for cleaner energy production solutions. The lack of a concrete offtake purchase agreement and the unknowns associated with a new energy source do pose a significant risk.

The size of the facility will impact the overall oil and gas industry with its significant use of natural gas in the future as the state's GOR increases. This project is expected to result in one of the lowest cost single sources of clean hydrogen production in the country due to the low cost of redevelopment of the Synfuels Plant, which is unique, and shorter conversion time that provides a competitive advantage.

The size and complexity of this project makes it have a 6-year timeframe.

The \$10M grant request is 1% of the project (\$1754M) cost. The applicants' intention is to spend the grant on a 1:1 basis (matched with private funding) during the Pre-FEED and FEED stage (\$29.8M). The loan (\$100M) will be in addition to a DOE loan (\$1149.7M) and \$493.9M of private equity. The competition for the Federal loan also is a risk. Two conditions were identified: (1) that the CSEA grant funding comes from SB 2345 (hydrogen allocation) dollars and (2) that the sale of DGC to Bakken Energy LLC be completed.

Presentation was made by Mr. Steven LeBow, Mr. Mike Hopkins, Mr. Shane Goettle, Curt Launer with Bakken Energy LLC, Jacek Szyzkowski, ATCO, and Mr. Paul Sukut with Basin Electric Cooperative for C-01-01 – Dakota H2 Hub. A copy of their handout responding to the Technical Reviewers' comments is available in the Industrial Commission files.

After the presentation the CSEA members had a discussion with the applicant and Mr. Sukut on the following points:

- In response to question, it was stated that the production of fertilizer will continue after the development of the clean hydrogen at the plant and the ammonia will also be decarbonized.
- Review of the breakdown of the processed natural gas and the capture of the carbon and the making of the hydrogen and the input and the output.
- Role of Mitsubishi Power Americas as a partner in the project.
- Status of the Department of Energy loan application.
- How the CO2 pipeline that goes from the SynFuels Plant into Canada will be utilized in this project. Response was that the input gas would not come from the Northern Border Pipeline; CO2 pipeline will be a 50/50 ownership with Basin Electric. 100 miles of the pipeline from Tioga to Beulah will be repurposed. The rest of the pipeline will remain a CO2 pipeline to Weyburn.
- Discussions have been ongoing with North American Coal regarding the status of the mine and the impact on the employees
- It was clarified that there could be a DOE loan guarantee which they are currently applying for; a separate piece is the availability of \$8 billion infrastructure grants that were recently appropriated by Congress – rules and allocations for those grants are still being developed. The applicant will be pursuing all grants, loans, tax credits, etc.
- Sale of the SynFuels Plant from Basin Electric to Bakken Energy LLC and the commitment to continue the employment of the current SynFuels employees (525 employees) from the period of the acquisition of the SynFuels Plant through the redevelopment of the plant as these highly qualified employees will be doing similar work and they are employees they want to have on staff.
- Discussion of the EOR potential using CO2 to the Bakken and the importance of having a CO2 pipeline available for that purpose.
- Discussions that had been taking place with Basin identifying the type of equipment that would be beneficial to this project so a determination could be made whether it would be beneficial to this project.
- Usage of the grant and loan funding if awarded – pre-engineering, pre-FEED will be the predominant usage; will not be for operations. Design work, assessing the state of the equipment at the SynFuels plant, etc.
- It is hoped that as the project expands there will be opportunities for more employees to be hired.
- The amount of private equity that has already been raised for this project and how the support from the State through this funding would be advantageous as the federal government looks at grant and loan guarantee opportunities.
- A review of the current work that is being done regarding CO2 capture.
- In response to a question, if the federal funding does not become available the project will continue to move forward.

It was moved by Christianson and seconded by Goerger that under the authority of North Dakota Century Code Sections 54-63.1-06 and 44-04-19.2(1) the Clean Sustainable Energy Authority enter into executive session for the purpose of considering Clean Sustainable Energy Authority confidential information. On a roll call vote Arthaud, Brown, Christianson, Friez, Goerger, McLennan, Neset, Lt. Governor Sanford voted aye. The motion carried unanimously.

Lt. Governor Sanford stated that The Clean Sustainable Energy Authority is meeting in executive session to consider confidential information. Only CSEA members and Industrial Commission staff will be present during the executive session unless an applicant is requested to appear before the Authority to clarify their confidential information. Any formal action will occur after reconvening in open session. I remind those present in the executive session that the discussion must be limited to the announced purpose which is

anticipated to last approximately 1.5 hours. The CSEA members that are joining by Teams must rejoin in the confidential session Teams link. The executive session will begin at 3:00 p.m.

The following CSEA members present in executive session were:

Lt. Governor Sanford
Jim Arthaud
Joel Brown
Al Christianson
Christopher Friez
Terry Goerger
Robert (Mac) McLennan
Kathy Neset
Tom Erickson
Lynn Helms
Justin Kringstad
James Leiman
Rachel Retterath
Todd Steinwand
Kelvin Hullet, BND staff and designee for Mr. Steinwand
John Weeda

Others present including Industrial Commission staff and Industrial Commission members staff:

Al Anderson CSEA Director
Karlene Fine, Industrial Commission staff
Katie Haarsager, Industrial Commission staff
Reise Haase, Governor's Office
Andrea Pfenning, Industrial Commission staff (remote) for a portion of the meeting.

During the Executive Session the CSEA took up the following agenda items:

Review of Confidential Information
Report on Economic Review Results

The CSEA meeting reconvened in open session at 5:00 p.m.

The CSEA took up each of the applications that had been heard for Grant Round 1.

C001-01 – Dakota H2 Hub; Submitted by Bakken Energy LLC; Total Project Costs: \$1.75 billion; Amount Requested: \$10 million (grant) \$100 million (loan)

It was moved by Goerger and seconded by McLennan that the Clean Sustainable Energy Authority recommends that the Industrial Commission provide financial assistance for the Dakota H2 Hub project submitted by Bakken Energy LLC as a grant in the amount of \$10,000,000 with the grant funding coming from the SB 2345 Hydrogen Projects allocation on a 1:1 basis and a loan in the amount of \$80,000,000 with the following terms:

- **Loan funds be released when the purchase agreement between Basin Electric and Bakken Energy for the purchase of the Dakota Gasification Company is signed.**

- **Bakken Energy may draw the \$80 million loan in two \$40 million segments. The first segment is January 1, 2022 to December 31, 2023. The second is from January 1, 2024 to December 31, 2026.**
- **Loans will be interest only for 2-years from the date when the total amount of \$40 million is drawn from each segment.**
- **P&I payments at 2% with a 15-year amortization starting in 2027.**
- **BND noted its preference for the \$80 million be repaid to the CSEA when the project goes to permanent financing if possible.**

Mr. Friez stated that this might be a great project and it may have merit and may solve some problems for the State of North Dakota. It clearly has a lot of smart people and a great team behind it but when I read the CSEA statute and look at the intent of what it is for and look at the timing and the number of unanswered questions that the project brings up, I don't think it fits the purpose of the statute at this time. It might at some future date but just not today.

Mr. Goerger stated he was excited about the project as it includes the production of some anhydrous for agriculture – the costs of which has doubled over the last six months. To have it made right here and all the other things that go with it including zero carbon, everything about it sounds right plus trying to keep people employed and moving ahead into the future long term. I think it is a great project and a lot of the people that are on the other side of it are ND people that are trying to improve things here in North Dakota.

Mr. Brown stated that on the merits of this project that when we were given the directive and the color from the legislators who helped to draft this legislation, we were told to focus on A+ projects that have a chance of making significant meaningful impact--to move the needle for energy in North /Dakota. Of all the projects that we have seen today I think this classifies for that. It is going to use approximately 5% of the natural gas that is produced in the state. We have a big problem of what we are going to do with the growth in the natural gas production. We are moving the needle with this project. Additionally, it is going to sequester approximately 10% of the ND CO2 emissions and I think that is meaningful. This proposes a use for the DGC plant that we heard today was not going to continue in its current use and can save the jobs for the people that work there. For those reasons I think this project applies to the statute and should be supported by the CSEA.

Mr. Christianson stated that Paul Sukut said Dakota Gasification would no longer be operating under Basin Electric's ownership and I have to believe Paul. I believe that this project could be good for North Dakota. I also have some reservations because we are in the middle of the United States and we have to move products out of North Dakota. The product is hydrogen and there are no hydrogen pipelines. There will also be anhydrous which we can use some in North /Dakota. I have some concerns about reactions politically to this because we are using State money to change the fuel source. However, I believe that Mr. Sukut gave us his best information so I will support the project.

Lt. Governor Sanford restated the conditions that the grant funds will come from those grant funds that were appropriated for hydrogen grants and the loan funding is contingent upon the purchase agreement with Basin Electric.

On a roll call vote Arthaud, Brown, Christianson, Goerger, McLennan, Neset, Lt. Governor Sanford voted aye. Friez voted no. The motion carried.

C-01-03 – Cerilon GTL; Submitted by Cerilon GTL ND Inc; Total Project Costs: \$2.8 billion; Amount Requested: \$10 million (grant) \$50 million (loan).

It was moved by McLennan and seconded by Christianson that the Clean Sustainable Energy Authority recommend that the Industrial Commission provide financial assistance for the Cerilon GTL project submitted by Cerilon GTL as a grant in the amount of \$7,000,000 with the condition that Cerilon provide a private equity match on a 1:1 basis before grant funding is distributed and a loan in the amount of \$40,000,000 with the following terms:

- **Loan funds be released over a 2.5 year period based on agreed to milestones between Cerilon and BND.**
- **Loans will be interest only for 3-years from the date when the \$40 million is drawn down.**
- **8 years of principal and interest payments at 2% interest rate after interest only period.**
- **BND express its preference for the \$40 million be repaid to the CSEA when the project goes to permanent financing.**

Mr. Brown stated the Cerilon application is another game changer for the industry. The opportunity that we have here to break the glass ceiling on some downstream products from the Bakken. The amount of natural gas they will be consuming is significant – 8% of North Dakota’s production currently with the opportunity to double that in the future and will lower CO2 emissions by 30% and will include 70 permanent jobs and over 1,000 jobs during construction. This project meets the mission of the CSEA and one that should be supported.

Mr. McLennan stated it was his hope that we can take carbon producing resources and generate significantly less carbon intense fuels and products meets the intent of the law. When you get to the final end of this in Phase 1 there will be a \$2.8 billion opportunity as well. We need to encourage that level of investment in the state.

Ms. Neset stated her agreement that this is a game changer and an opportunity for the State of North /Dakota that does not come along often. This is a special opportunity – I think it meets the criteria of the Authority and I support it.

Mr. Goerger stated this is a futuristic project because they are taking it to the next level. We have been having conversations about energy in North Dakota for the past 10 to 15 years and what is the next step and that is to take it to chemicals, pharmaceuticals, etc. Very much in favor of this.

On a roll call vote Arthaud, Brown, Christianson, Friez, Goerger, McLennan, Neset, Lt. Governor Sanford voted aye. The motion carried unanimously.

C-01-05 – Vapor Recovery Units to Capture Fugitive Gas Emissions from Oil & Gas Locations; Submitted by Marathon Oil Company; Total Projects Costs: \$6.4 million; Amount Requested: \$3.2 million (grant).

It was moved by Goerger and seconded by Arthaud that the Clean Sustainable Energy Authority will not provide financial assistance for the Vapor recovery units submitted by Marathon Oil Company.

Mr. McLennan there is a lot of merit in what the applicant is doing to get our arms around what is seems to be a perennial challenge. The thought is that winterizing the existing technology and putting it into commercial operation with or without the CSEA funding is beneficial to the company. For that reason it is going to go forward in a commercial fashion and benefits the 8 units that they are currently doing.

Mr. Brown stated everybody here was impressed with what Marathon was proposing. Thinks it is an excellent foot forward for them and we hope that is something that the industry will adopt going forward.

It is a good project and Marathon is doing an excellent job and should be recognized for that but it is not applicable for this program.

On a roll call vote Arthaud, Brown, Christianson, Friez, Goerger, McLennan, Neset, Lt. Governor Sanford voted aye. The motion carried unanimously.

C-01-07 – Unlocking the Full Potential of Produced Water as a Key Component of Clean Sustainable Energy; Submitted by Wellspring Hydro; Total Project Costs: \$2.2 million; Amount Requested: \$1.1 million (grant).

It was moved by Brown and seconded by McLennan that the Clean Sustainable Energy Authority recommends that the Industrial Commission provide financial assistance for the Unlocking the Full Potential of Produced Water as a Key Component of Clean Sustainable Energy project submitted by Wellspring Hydro as a grant in the amount of \$1,000,000 with the condition that only 50% of the funding be distributed until such time as Wellspring Hydro has initiated the permitting process with the appropriate permitting/regulatory authorities.

Ms. Neset stated the merits of this go to the heart of what we are trying to do with CSEA. We are taking new technology, applying it here to a situation in the Williston Basin and she applauded the company for their work, and we should support this project with this grant.

On a roll call vote Arthaud, Brown, Christianson, Friez, Goerger, McLennan, Neset, Lt. Governor Sanford voted aye. The motion carried unanimously.

C-01-08 – Commercial Deployment of Carbon Dioxide Capture & Geological Sequestration in McLean County; Submitted by Midwest AgEnergy Group; Total Project Costs: \$58.8 million; Amount Requested: \$5.2 million (grant).

It was moved by McLennan and seconded by Christianson that the Clean Sustainable Energy Authority recommend that the Industrial Commission provide financial assistance for the Commercial Deployment of Carbon Dioxide Capture & Geological Sequestration in McLean County project submitted by Midwest AgEnergy Group as a grant in the amount of \$3,000,000.

Mr. McLennan as we continue to find opportunities for CO2 capture and sequestration by the carbon emitters there is value in having the ag sector and ethanol facilities involved. This has merit as we continue to get more individuals working with those in the State to learn more about the subsurface, what all the pieces of carbon storage look like, the more we have a better chance for all the projects to work together.

On a roll call vote Arthaud, Brown, Christianson, Friez, Goerger, McLennan, Neset, Lt. Governor Sanford voted aye. The motion carried unanimously.

C-01-09 – Front-End Engineering and Design for CO2 Capture at Coal Creek Station; Submitted by EERC; Total Project Costs: \$15,065,200; Amount Requested: \$7,532,600 (grant).

It was moved by Goerger and seconded by Christianson that the Clean Sustainable Energy Authority recommends the Industrial Commission provide financial assistance for the Front-End Engineering and Design for CO2 Capture at Coal Creek Station project submitted by the Energy and Environmental Research Center as a grant in the amount of \$7,000,000 with the condition that Rainbow Energy Center provide a 1:1 match as grant funding is disbursed

Mr. Christianson stated that when you look at what the CSEA is to do this project gives everybody that looks at CO₂, an opportunity to look at how carbon capture works on lignite plants and different technologies are a wonderful thing. It is important to learn more about the geology east of the Missouri River. This is a good project; it is an “A” project and a game changer.

Mr. Brown echoed those comments and of all the projects that were looked at today this is the one that can move the needle the furthest to carbon neutral by 2030. The proposal we saw today is that Coal Creek, if this project comes to fruition, capturing over 10 million tons of CO₂ a year which makes up approximately 17 percent of North Dakota CO₂ production. This one, by itself, CSEA would have been a success.

On a roll call vote Arthaud, Brown, Christianson, Friez, Goerger, McLennan, Neset, Lt. Governor Sanford voted aye. The motion carried unanimously.

C-01-10 – Solving North Dakota Flaring: Mobile Flare Gas Capture & Fueling Platform Expansion; Submitted by Valence Natural Gas Solutions; Total Project Costs: \$44 million; Amount Requested: \$2.5 million (grant) \$15 million (loan)

It was moved by Goerger and seconded by McLennan that the Clean Sustainable Energy Authority recommend the Industrial Commission provide financial assistance for the Solving North Dakota Flaring: Mobile Flare Gas Capture & Fueling Platform Expansion project submitted by Valence Natural Gas Solutions as a loan in the amount of \$15 million with the following conditions:

- **loan parameters are for 2-years of interest only payments followed by 7-years of Principal and Interest payments at a 2% interest rate.**
- **BND recommends this administered loan be implemented in cooperation with a lead financial institution selected by the company. The lead bank can provide monitoring of the loan and assist with implementation of covenants. It also assists the company in establishing its relationship for future activities beyond the CSE loan.**
- **The company is also open to discussion on cash sweeps based on company profitability to enable faster paydown of the loans.**
- **Lead financial institution and BND will determine securitization of collateral as available.**

Mr. Brown stated this is an excellent project as the applicant has taken on the most difficult natural gas capture problem and the State of North Dakota is 100% better today. As far as the amount of funding goes, we are moving the needle quite a bit with the amount the CSEA is recommending and as we look at these projects most of these have a long horizon – this one we will see fruit within the next 12 months. We should support this project.

On a roll call vote Arthaud, Brown, Christianson, Friez, Goerger, McLennan, Neset, Lt. Governor Sanford voted aye. The motion carried unanimously.

Lt. Governor thanked the Authority members for their work today. They have recommended approval of a variety of projects—moving the needle on capturing and utilizing natural gas, carbon capture with one of the most game changing requests at Coal Creek; bringing on hydrogen, and dealing with produced salt water.

With no further business, Lt. Governor Sanford adjourned the meeting at 5:30 p.m.



Lt. Governor Brent Sanford, Chairman