

2021 HOUSE ENERGY AND NATURAL RESOURCES

HB 1452

2021 HOUSE STANDING COMMITTEE MINUTES

Energy and Natural Resources Committee Coteau AB Room, State Capitol

HB 1452
1/28/2021

relating to a clean sustainable energy authority and a clean sustainable energy fund; relating to an exemption from procurement services for energy programs; to provide a continuing appropriation; to provide an appropriation; to provide a transfer; and to provide a report

Chairman Porter opened the hearing at **2:30 pm**.

Present: Representatives Porter, Damschen, Anderson, Bosch, Devlin, Heinert, Keiser, Lefor, Marschall, Roers Jones, M Ruby, Zubke, Guggisberg, and Ista.

Discussion Topics:

- Biosurfactants, carbon capture
- The future of western ND and impact on people
- Financing fossil fuel projects
- Low interest loans

#4136 Rep Glenn Bosch, District 30
#4106 Ron Ness, President, ND Petroleum Council
#4103 Kevin Black, Creedence Energy Services
#4061 Charlie Gorecki, CEO, UND E&ERC
#4138 Jason Bohrer, Lignite Energy Council
#4077 Gerald Bachmeier, president, ND Ethanol Producers Association
#3769 Stacey Dahl, Senior Mgr of External Affairs, Minnkota Power Cooperative
#4108 Josh Teigen, director, Economic Development and Finance Division
#3966 Dustin Gawrylow, managing director, ND Watchdog Network
#3956 Scott Skokos, Executive Director, Dakota Resource Council

Additional written testimony:

#3524, #3844, #3897, #3921, #3961, #4061, #4241

3:30 pm closed the hearing on HB 1452.

Kathleen Davis, Committee Clerk

HB-1452

Chairman Porter and members of the Energy and Natural Resources Committee, for the record I'm Glenn Bosch and I represent Bismarck's District 30. I'm here today to introduce House Bill 1452.

HB-1452 establishes a Clean Sustainable Energy Authority to support research and development of 21st century technologies and to advance low emissions, minimal footprint energy production in ND. The goal of HB-1452 is to establish ND as a world leader in clean, sustainable energy. This bill will support research and development of large-scale projects and technologies that advance energy production while reducing impacts, ultimately growing and diversifying the ND economy.

HB1452 develops a framework for the state acting in partnership with private industry to bring new and emerging technologies into commercial use.

The clean sustainable energy authority is modeled after existing authorities under the North Dakota industrial commission and would establish a program to award grants and loans that bring expanded opportunity to our state.

Environmental, social, and corporate governance (ESG) concepts have increasingly been a topic of focus. The term refers to a set of criteria used for measuring the sustainability and social impact of a company's operations that investors use to screen opportunities. Today, investors are increasingly applying these non-financial factors as part of their analysis process to identify potential risks and growth. This bill instructs the authority to make recommendations to the legislative assembly on a comprehensive environmental, social, and governance policy for the state.

Lastly, the bill establishes the Clean Sustainable Energy Fund. This fund consists of all moneys transferred from the Legislative Assembly and other contributions received by the fund.

Chairman Porter and committee members, we know that ND has vast energy resources. We are perfecting the production of these resources every day. This new authority will help us ensure that ND is a leading producer of all of the above energy as we remain responsible stewards of our landscape.



House Bill 1452

Testimony of Ron Ness

House Energy and Natural Resources Committee

January 28, 2021

Chairman Porter and members of the Committee, my name is Ron Ness, president of the North Dakota Petroleum Council. The North Dakota Petroleum Council represents more than 650 companies in all aspects of the oil and gas industry, including oil and gas production, refining, pipeline, transportation, mineral leasing, consulting, legal work, and oilfield service activities in North Dakota. I appear before you today in support of House Bill 1452.

The timing is right to be hearing this bill, given the assault on fossil fuels the Biden Administration has initiated over the past week. These drastic actions should concern every American who heats their home, drives a car, tractor, or truck, wears comfy clothes, uses a cell phone or computer, or just lives a normal life. North Dakotans appreciate the importance of fossil fuels to our lives, jobs, families, communities, education, infrastructure, and our state budget. We know the climate activists are coming for us, so what can we do as a state to ensure we do not leave 800 years of coal in the ground or leave one of the top ten oil fields in the world under-capitalized and under-developed? House Bill 1452 is an important first step in ushering in the next generation of energy production that consumers are demanding. This doesn't mean no more fossil fuels; this means we innovate, and we do it better. House Bill 1452 would provide the framework and funding to support large-scale demonstration projects to improve and advance energy production in our state while reducing impacts.

North Dakota has a strong record of facilitating partnerships to produce innovative results and we know the value of our resources. Let's show the world what we can accomplish through technology and innovation to reduce our carbon emissions and environmental footprint and change the tone of tomorrow.

It's time we act. Let's pass House Bill 1452 and reinvest in our state's resources to become the world leader in the production of clean sustainable energy. NDPC Board member Kevin Black with Creedence Energy Services is joining remotely today to discuss the technology his company is developing and the great potential it has for value-added energy.

Sixty-Seventh Legislative Assembly of North Dakota
House of Representatives
Energy and Natural Resources Committee

Clean Sustainable Energy Legacy Authority - HB 1452
Kevin Black Testimony
January 28, 2020

Mr. Chairman and members of the Energy and Natural Resources Committee, thank you for the opportunity to provide testimony in favor of House Bill 1452, an act to create a Clean Sustainable Energy Legacy Authority. My name is Kevin Black, and I serve as Co-Founder and CEO of Creedence Energy Services, the Williston Basin's leading, local oil and gas production chemical provider. Our business was founded by my two cousins, Wyatt and Malachi Black, and I in 2015, and we have grown the business to over 70 team members including engineers, chemists, professional drivers, field technicians, and support staff with locations in Williston, Dickinson, and Minot, ND, and also in the Permian Basin.

As a life-long North Dakotan and business owner, I would like to illustrate why this bill is essential to the future sustainability of our industry and the critical tax base it provides. Consider our business, Creedence, for example. We operate in a highly technical and constantly evolving space within the world of chemistry, and I am proud to say that we have developed, right here in North Dakota, some of the most advanced corrosion and scale inhibitors on the market, chemistries essential to the sustained production of oil and gas wells. We compete against the largest national and multinational companies in the world and have proven that cutting edge technology can be developed in our state, rather than in the traditional R&D centers like Texas and Oklahoma.

However, technology continues to evolve at a blistering pace, and our state needs a relevant, vibrant, and successful oil and gas industry. Thus, it is not enough to rest on our past laurels. To remain relevant and an attractive target of investors, we must be competitive on a national stage against other oil plays, namely the Permian Basin. I can personally attest, through our growth into Texas, to the fact that ND is absolutely in competition for capital with the Permian every single day, and I believe that North Dakota's competitive advantage lies in the efficacy of our innovation and commitment to finding sustainable solutions.

Case and point – since the COVID pandemic and crash of oil prices, Creedence has been in collaboration to develop an innovative, novel biosurfactant for use in enhanced oil recovery. I will spare the committee a lesson in chemistry, but with approval by the North Dakota Industrial Commission yesterday to fund trials, we believe this chemistry can enhance oil production on our state's aging wells, potentially flattening, or even reversing the production decline you are all acutely aware of in Bakken/Three Forks wells.

But there is an even more exciting component that ties directly to HB 1452. The biosurfactants we propose are a class of sophorolipids, which are synthesized biogenically. In other words, they are manufactured by a proprietary fermentation process, similar to how yeast and bacteria in other fermentation processes produce alcohol. The major components in this process are two of North Dakota's largest crops – sugar from sugar beets in the Red River Valley and canola from across the prairie. This patented process yields highly concentrated, surface-active, and biodegradable surfactants

that can be produced by using scalable and modular systems that do not require the extensive permitting nor pose the environment risk of traditional petrochemical manufacturing facilities.

In other words, if proven successful, we could develop a bridge between oil and gas and the agriculture community, right here in North Dakota, through value added manufacturing in the pursuit of enhancing oil production and supporting our state's base economies.

However, these technological leaps forward do not happen on their own, and this bill would create a springboard for the innovation necessary for furthering North Dakota's markets and exports, including our project. Every two years, thousands of North Dakota workers look toward leaders in industry and government to work together, so that entrepreneurs can find the solutions to the big challenges we face in our modern economy and current political environment. These types of innovations and scientific breakthroughs are the keys to unlocking the next decade of clean, sustainable, and low carbon energy production. Thank you for the consideration of my testimony, and I encourage you to vote in support of HB 1452. I am happy to stand for any questions.

Comments on HB 1452

Chairman Porter, and members of the committee, my name is Charlie Gorecki. I am the CEO of the University of North Dakota (UND) Energy & Environmental Research Center, more commonly known as the EERC. The EERC is a nonteaching arm of UND, and under the auspices of the state of North Dakota, we are focused on providing practical pioneering solutions to the nation's vexing challenges at the nexus of energy and the environment.

The EERC is pleased to provide the following brief commentary regarding the challenges facing North Dakota's energy producers and our views on how HB 1452 could facilitate the sustainable development of North Dakota's abundant natural resources that are so vital to our existing and future economy. Our world-renowned Bakken resource represents approximately 10% of current domestic oil production. Similarly, our Fort Union lignite resource represents the largest minable lignite resource on the planet, with more than 800 years of minable resource at current mining rates. Finally, our state leads the nation in the production of barley, durum wheat, sunflowers, flaxseed, and honey and ranks among the top few producers of numerous additional agricultural commodities. Put simply, our state is a critical producer of those natural resources that mobilize, energize, and feed the world. Today, we see all of North Dakota's phenomenal natural resource production platforms undergoing severe economic hurdles. In addition, these platforms are challenged by global and domestic federal policies that demand a reduced environmental footprint and scrutinized by investors demanding sustainable technology for natural resource production.

In the last legislative session, the legislature established the EERC as the State Energy Research Center and provided funds to facilitate exploratory energy research. These funds, administered

through the State Energy Research Center, have allowed the bright minds at the EERC to develop nascent energy and environmental technologies with substantial future potential for the next generation of energy production. We greatly appreciate the state's support and see that investment already paying dividends, with an increase in invention and in the attraction of federal and commercial dollars for further development of several technologies.

For many years prior to the establishment of the EERC as the State Energy Research Center, and continuing today, the EERC has worked closely with industry, the state, and the federal government to research, develop, and demonstrate emerging technologies. Much of this research, development, and demonstration has been made possible through matching of significant industry investment with investment from the legislatively enabled Oil & Gas Research Program, the Lignite Research, Development & Demonstration Program, and the Renewable Energy Program. These research programs have provided essential funds to advance promising energy and environmental technologies that enhanced the lives of our citizens, our economy, and our environment.

The EERC believes that HB 1452 would provide critical funds to facilitate the deployment of clean and sustainable energy technologies in their final stages of development to help those technologies reach commercial reality. Essentially, HB 1452 provides the funds that encourage those first deployers of emerging technology to take that final leap to implementation.

First movers could be projects where CO₂ is captured from North Dakota's minemouth lignite-fired power plants and ethanol facilities, compressed, transported to, and injected into North

Dakota's Bakken petroleum system for enhanced oil recovery and carbon storage. Projects like this would not only further enhance the production of all these natural resources but would also reduce the environmental footprint of those activities, satisfying the societal demands of a rapidly evolving and challenging global market. Similarly, projects catalyzed with this funding could facilitate the deployment of energy storage technologies that provide critical resilience and reliability to our electrical grid that transports increasingly larger amounts of renewable energy.



January 28, 2021

House Energy and Natural Resources
Committee Hearing on HB1452
Bismarck State Capitol

Chairman Porter and House Energy and Natural Resources Committee Members,

On behalf of the members of the Lignite Energy Council, I am submitting testimony today in support of House Bill 1452 which would create the Clean Sustainable Energy Authority and the Clean Sustainable Energy Fund.

The framework of HB1452 would build upon the success of the Lignite Research Council (LRC) to create a “super council” that would boost all sectors of North Dakota’s energy industry by providing substantial opportunities for research and development combined with the flexibility necessary to be able to best receive and utilize private and public investment within our state.

The LRC has been supporting substantial investments in carbon capture projects, which could spur a new market for carbon dioxide and funding research into rare earth minerals found in lignite, both areas could have global significance if our projects are proven successful. Soon, there may be other similar projects that will need additional R&D funding to reach the commercialization stage where a project can be built.

Our experience has shown how a proposal like HB1452 will greatly help bold proposals achieve the proper vetting, funding, and support from the private and public sectors to find the way forward to become a reality and provide significant returns for our state.

For these reasons, the Lignite Energy Council supports HB1452 and we respectfully ask that the committee provide this legislation with a favorable “Do-Pass” recommendation.

Thank you for your consideration,

Jason Bohrer
President and CEO
Lignite Energy Council

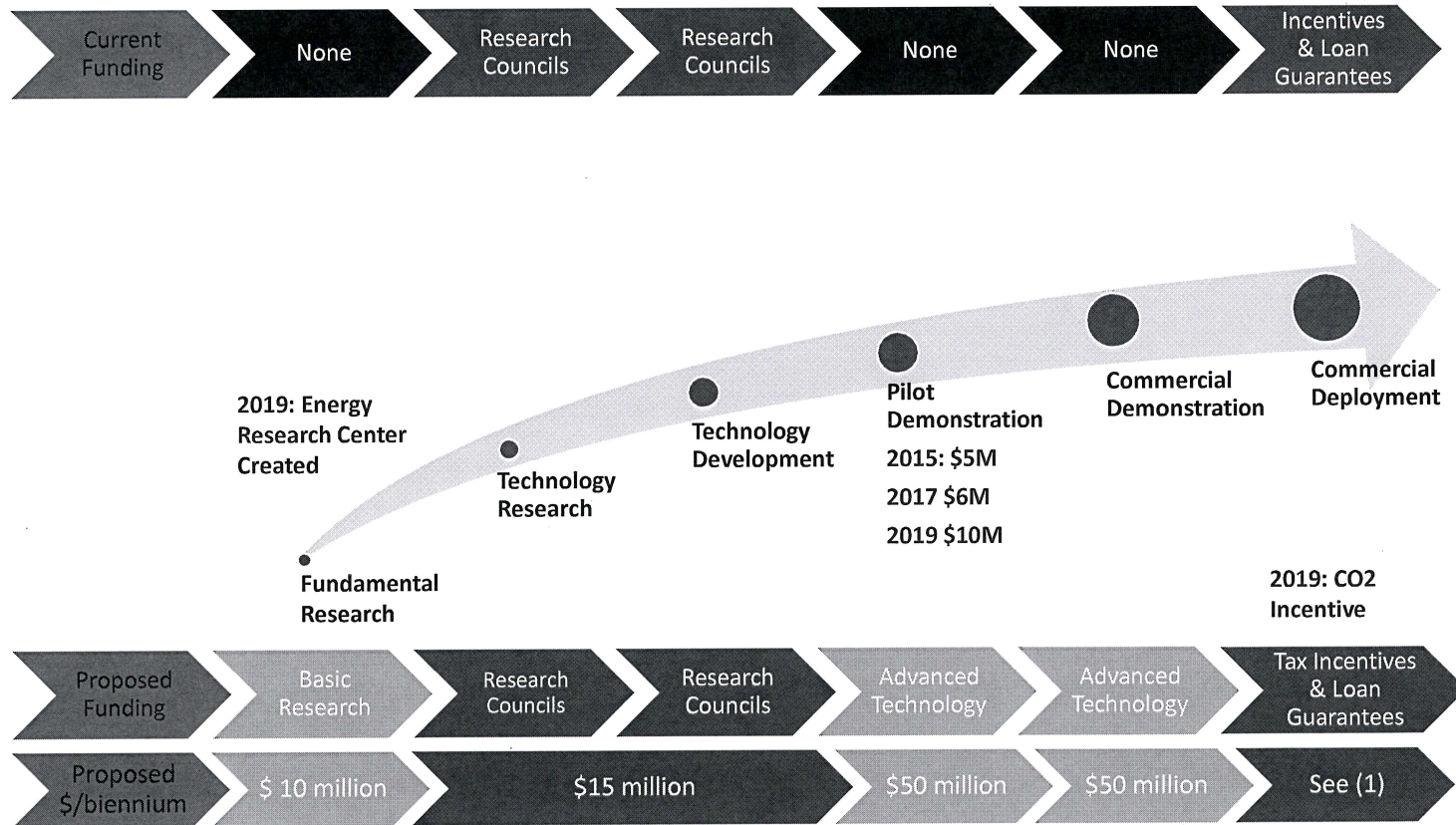
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Typical Technology Development Pathway & Funding



(1) Continue existing incentives and add anthropogenic CO2 incentive



Testimony of Gerald Bachmeier

CEO of Red Trail Energy and President of North Dakota Ethanol Producers Association

To the House Energy and Natural Resources Committee
In Support of House Bill 1452

January 28, 2021

Chairman Porter and members of the committee:

My name is Gerald Bachmeier, I am the president of the North Dakota Ethanol Producers Association, which represents North Dakota's six ethanol plants, industry stakeholders and associated businesses. I am here today to support House Bill 1452, which would establish a Clean Sustainable Energy Authority to propose comprehensive environmental, social, and governance policies and to make recommendations for grants and loans from a clean sustainable energy fund to help commercialize projects.

North Dakota's ethanol industry contributes more than \$623 million annually to the state's economy and provides thousands of direct and indirect jobs. North Dakota's economy is dependent on agriculture and ethanol is a big deal here- the industry converts 200 million bushels of corn (40 to 60% of the state's average corn crop) into 543 million gallons of ethanol and 1.5 million tons of dried distillers grains for livestock feed.

Ethanol is a renewable fuel used in more than 95% of the gasoline consumed in United States motor vehicles. A recent study found that greenhouse gas emissions from corn ethanol are 46% lower than gasoline. We compliment the state's foresight in creating a regulatory and incentive framework that have already supported investments in environmental and social energy alternatives like ethanol.

The Ethanol Producers Association supports the proposal in HB 1452 to create an energy fund to help provide a mechanism to enable investing in emerging technologies and next generation energy opportunities. Expansion of sustainable product production and processes can lead to opportunities for value-added projects that support high paying jobs, enhanced economic activity, and add more value to our agriculture and other products.

I want to offer an example of how we are adding value to an already clean energy product. North Dakota ethanol plants are leading the nation in low carbon ethanol. The state Renewable Energy Council, along with private industry dollars, have invested in research to help commercialize emerging carbon dioxide capture technologies. Ethanol plants produce 18 pounds of nearly pure CO₂ for every bushel of corn processed. Our industry recognizes an opportunity to capture that CO₂ and use it to generate additional revenue.

At Red Trail Energy we are working in coordination with the Energy and Environmental Research Center a Carbon Capture and Storage project, which has the potential for tens of millions of dollars of economic impact per year. This project not only provides an additional revenue opportunity for use of the CO₂, but capturing the carbon improves the Carbon Intensity (CI) value of the ethanol as evaluated by several West Coast markets. Ethanol produced with a lower CI score is differentiated from other ethanol and is worth more in California and Oregon due to their Low Carbon Fuel Standards.

Our facility and other North Dakota producers are investing in projects like these, to further process ethanol, corn or other agriculture products into higher-value products, to help generate additional revenue for owners of Red Trail and our other ethanol plants. Additional investments in renewable and alternative energies are good for farmers, communities, and North Dakota.

Ethanol Producers appreciate the inclusion in HB 1452 of one voting member of the Renewable Energy Council on the proposed Clean Sustainable Energy Authority but hopes you will consider additional representation from the renewable energy sector. We ask for the committee's consideration to add one more representative from the Renewable Energy Council, so its two voting members would match the two members appointed by the lignite research council and two members appointed by the oil and gas research council.

The ethanol industry supports House Bill 1452, and we also ask for your favorable consideration of our friendly amendment.

I will try to answer any questions you may have.



North Dakota House Bill 1452

Testimony of Stacey Dahl – Minnkota Power Cooperative
House Natural Resources Committee
January 28, 2021

Chairman Porter and Members of the House Energy and Natural Resources Committee,

Thank you for the opportunity to testify in support of HB 1452. By way of background, I work as Senior Manager of External Affairs for Minnkota Power Cooperative, based in Grand Forks. Minnkota is a non-profit electricity generation and transmission cooperative and is the sole supplier of electricity for eleven (11) non-profit cooperative distribution companies and the operating agent for Northern Municipal Power Agency which serves twelve (12) small cities in eastern North Dakota and northwest Minnesota. Minnkota serves approximately 140,000 customers over a 35,000 square mile area.

In recent years, I have also had the privilege of serving on the leadership team working to develop Project Tundra. Tundra is a bold initiative to build the world's largest carbon capture facility in North Dakota, and represents a vision for our state's energy future, consistent with the goals of HB 1452. The project is exploring innovative technologies that are in their final engineering phase, and if constructed, would capture approximately 90% of the CO₂ emissions from our largest coal unit at the Milton R. Young Station. Plans are also in the works to capture additional CO₂ emissions from the adjacent smaller generating unit, and as a result, 4 million metric tons of CO₂ would be captured and sequestered annually. For context, that has the equivalent emissions reduction of permanently taking over 800,000 gas-powered vehicles off the road. While Minnkota is spearheading this effort, this project would not be at this stage of development without the tremendous state and federal support provided, as well as expertise by the Energy and Environmental Research Center (EERC) at UND. We are closer than ever to taking this project from concept to a commercial reality, yet there are critical challenges remaining.

Through many years of research and development, leading scientists and geologists have gained very high confidence in our ability to safely capture and store large volumes of CO₂ through Project Tundra. However, the project still has to overcome hurdles before a decision can be made to move forward with construction. Carbon capture utilization and storage projects are complex, expensive and risk intensive. Financing the project and the anti-fossil fuel movement more broadly will provide challenges in the coming year. HB 1452 is a positive step to aggregate the effort and resources to help projects commercialize – and realize our state's role as a world leader in clean energy technology development.

Minnkota Power Cooperative supports HB 1452, and encourages the Committee to recommend a Do Pass on this bill.

Department of Commerce Testimony

HB1452

January 13, 2021

Senate Appropriations Committee

Hello Chairman and members of the Committee,

My name is Josh Teigen and I am the Director of Economic Development and Finance Division for the ND Department of Commerce.

I am here today to testify in support of House Bill 1452. At the Dept. of Commerce we recognize ESG and know that it is a cornerstone for both energy and ag to successfully move forward in the coming years. Our job is to do everything we can to increase the overall wealth of the state. The capital markets are telling us that ESG needs to be the future, so our role is to work to position the state to best access this necessary capital. The markets have gone a step further with the announcement from Blackrock that not only will their investments require ESG compliance, but they will actually begin divesting from non ESG compliant opportunities.

This move is significant and influential for others to follow. With a state like ND that is heavily reliant on oil and soil for the strength of our economy, we need to be proactive rather than reactive in this space in order to remain competitive. This Bill allows us to do that through a data, research, and industry driven approach. I encourage you to support this Bill as it is paramount to the success of our energy industry in the future.

I know stand for any questions you may have.

HB 1452 – Testimony by Dustin Gawrylow (Lobbyist #266) North Dakota Watchdog Network

This session, there are several bills that are designed to help create a soft-landing or manage the decline of the coal-fired electrical power industry.

While it is perfectly understandable as to why there is a desire to slow the obsolescence of legacy energy technologies, it is important to remember that not only is North Dakota fighting the federal government's incentive programs regarding alternative energy sources, but that the free market itself is pushing away from fossil fuels.

House Bill 1452's headline reads "Clean Sustainable Energy Authority" but the members on the governance board of this new expansion of government are mostly representatives of existing energy sources. It does not take a very big leap to realize that this is going to be a new government program designed to offer protectionist policies and support for older industries.

To cite a specific problem with the premise of this bill, it bill is extremely open ended and grants the Industrial Commission vast powers on Page 4 Line 15:

"The commission may acquire, purchase, hold, use, lease, license, sell, transfer, or dispose of any interest in an asset necessary for clean sustainable energy technology development to facilitate the production, transportation, distribution, or delivery of clean energy commodities produced in the state as a purchases of last resort."

From what I can tell, this means the Industrial Commission is authorized to bail out and acquire anything it deems relevant to "clean energy". Does the legislature really want to let the Industrial Commission start buying up companies, facilities, or equipment? I doubt it.

This bill is an open-ended bailout masquerading as a clean energy bill.

Let's not spend millions of dollars and expand government this way.

Instead of trying to slow the inevitable, and spend a lot of the taxpayer's money to do it, North Dakota should actively seek to find ways to prepare its workforce for the changes that will be coming.

The people of North Dakota and the workers in the energy industry deserve to hear the truth.

This \$25 million expansion of government should be focused on preparing North Dakota for the changes that are coming. And we should do it before the extreme environmentalists force it to happen artificially at the federal level.

The people who work in the energy industry need leaders who will pave the way to future, not try to build a wall to keep the future at bay.

I urge a DO NOT PASS on this bill and any other idea this session that seeks to create a protectionist bailout system for any industry.

Testimony of Dakota Resource Council
House Bill 1452
January 28th, 2021

1 Chairman Todd Porter & members of the committee, my name is Scott Skokos and I am
2 testifying on behalf of Dakota Resource Council and our members. Thank you for allowing me
3 to testify today. I stand here today in opposition of HB 1452 as it is currently written.

4 Dakota Resource Council (DRC) is a non-partisan grassroots group of landowners,
5 ranchers, farmers, and other citizens. A key part of our mission is to promote the sustainable use
6 of North Dakota's natural resources. Naturally, we would be in support of establishing a clean
7 sustainable energy authority in ND. In fact, when we first heard about the idea, we were very
8 excited. Unfortunately, upon reading HB 1452, we are struck with several key failings of the bill.

9 The first major issue is the selection for representation for the seven voting members of
10 the authority. On page 2, lines 8 – 13, HB 1452 outlines who will provide representation, with
11 voting powers, for the clean sustainable energy authority. While there are two members from the
12 lignite research council and oil & gas research council, there is only one member from the
13 renewable energy council. For a clean sustainable energy authority, this seems extremely
14 skewed. We understand that there will be representation from all types of energy, but this seems
15 to be lopsided for a clean sustainable energy authority. We are not opposed to having
16 representation for lignite and oil & gas, however, in addition to the renewable energy council,
17 there should be representation from the solar and wind industries. If the purpose is to truly have
18 clean sustainable energy in ND for the long-term and to reduce the environmental impacts of
19 energy, then we propose the amendment as stated below.

20 The seven voting members consist of:

- 21 a. One member appointed by the legislative management to serve as chairman;
22 b. ~~Two~~ One members appointed by the lignite research council;
23 c. ~~Two~~ One members appointed by the oil and gas research council;
24 d. One member appointed by the renewable energy council;
25 e. One member appointed by the western Dakota energy association;
26 e. One member appointed by the governor from the solar industry; and
27 f. One member appointed by the governor from the wind industry.

28 HB 1452 also does not provide specific requirements on what the funding provided by
29 the authority can be spent on. It only states that it must "reduce environmental impacts of energy
30 production." We would like to see more specific requirements for these grants, loans, and other
31 financial assistance so that the money can be spent wisely. As it is currently written, it appears
32 that the money can be spent on just about anything, no requirements. We believe that this bill
33 should be amended so that at least 50 % of the funding must goes towards non-fossil-fuel energy.
34 Dakota Resource Council believe that there should be more clearly defined requirements for

35 what the money can be spent on. There needs to be specific parameters included. Which leads to
36 our next concern, the lack of transparency.

37 We understand that with innovative technology and research there is sometimes a need
38 for trade secrets and the withholding of confidential information that could jeopardize a project.
39 However, DRC questions the transparency around approving grants and other funding from the
40 clean sustainable energy authority. As it is currently written, companies seeking money from the
41 authority can remain secret forever. We think that the advisory should be transparent with how
42 and to who it grants money. The public should know where the money is going. It should only be
43 in very specific situations that information is sealed, and if that is the case, we believe that this
44 information shouldn't be sealed forever, perhaps a limit of 5-10 years. The information should be
45 released at a certain point and there should also be some methodology included in the bill to
46 unseal information for specific cases in which it is imperative to access that information.

47 Our final major concern can be found on page 4, lines 10-12, where it gives the power to
48 commission to "Accept loan repayments, donations, grants, contributions, or gifts from any
49 public or private source to carry out the purposes of this chapter, which must be deposited in the
50 clean sustainable energy fund." We find the language of "gifts from public or private sources" to
51 be concerning. Can this commission just accept money from any entity? Is that ethical? Can the
52 commission accept gifts from out-of-state interest groups? Will the records of these gifts be
53 publicly available? Again, to our former point, what is this money going to be used for? What
54 are the very specific requirements this money to be spent on? This raises a lot of questions for us
55 around ethics and transparency. We believe in moving North Dakota towards a clean and
56 sustainable future in energy, but HB 1452 misses the mark in several ways.

57 I urge the committee to oppose HB 1452 or amend it to have more appropriate
58 representation, detailed requirements for funding, increased transparency, and clarification on
59 gifts for the clean sustainable energy authority created in HB 1452.

60



Bill Number	Name	Lobbyist #	Support	Oppose	Neutral
HB 1452	Jean Schafer, Basin Electric	8	X		

We stand in support of this bill and would reiterate the testimony provided by the Lignite Energy Council.



Testimony of Jennifer Greuel
Economic Development Association of North Dakota
In Support of HB 1452
Jan. 28, 2021

Chair Porter and members of the House Energy and Natural Resources committee:

The Economic Development Association of North Dakota represents more than 80 large and small and rural and urban economic development organizations on the front line of growing businesses and communities in North Dakota. The primary purpose of the organization is to promote the creation of new wealth throughout North Dakota to develop more vibrant communities and improve quality of life. It is for these reasons our organization and its members want to express support for HB 1452.

Energy and agriculture have long been the two historical and leading pillars of North Dakota's economy. EDND supports investments that will enhance these important economic sectors and ensure their success in the future, while making strides to diversify the economy. If North Dakota wants to remain a leader in the energy sector, we will have to invest in research and encourage innovation.

Thank you for the opportunity to express our support for HB 1452 and for your continued commitment to keeping North Dakota globally competitive and diversifying the state's economy.

HB 1452

Testimony January 28, 2021

Mr. Chairman . Members of the committee. My name is Todd Leake. I am Chair of Dacotah Chapter of Sierra Club.

Dacotah Chapter of Sierra Club has over 500 members throughout North Dakota. As a group we are actively involved in promoting clean, renewable energy development in North Dakota.

While creating a clean sustainable energy authority to facilitate, promote, and provide guidance and financial support for the development of North Dakota's clean energy resources has merit, HB 1452 falls far short of the mark. Attempting to create an authority membership that does not include representation from the clean energy industry or local citizen, agriculture and landowner, or clean energy advocacy organizations is obviously not a serious endeavor.

The list of proposed advisory members represents, almost exclusively, organizations and government agencies associated with the fossil fuel industry. There is no proposed membership representation from North Dakota solar, wind, or alternative energy industries. There is also no proposed representation from North Dakota's environmental community who have long advocated for clean, renewable energy in the state.

Voting members include: two appointed by the lignite research council; two appointed by the oil and gas research council; one member appointed by the renewable energy council, an entity within the ND Industrial Commission; and one member appointed by the western Dakota energy association.

Non-voting members include: the ND Outdoor Heritage Fund, also an entity within the ND Industrial Commission, whose mission statement does not include anything remotely related to energy development; and four state agencies charged with regulating the fossil fuel industry in North Dakota.

In the end, HB 1452 appears to be more like an attempt by the fossil fuel industry and its sycophants to "hi-jack" the trajectory of clean energy in North Dakota and control any grant money that may be awarded for advancing clean energy development in the state.

Before spending \$25,000,000 of our state's limited financial resources we want to make sure we will be getting the most "bang for the buck" in directing grant money to the most effective on the ground clean energy projects.

Given the glaring short-comings of HB 1452, perhaps a legislative study of the issue is warranted before proceeding with a bill that will not accomplish the very worthy goal of enhancing ND's clean sustainable energy development.

Although Dacotah Chapter of Sierra Club whole heartedly supports the continued development of North Dakota's clean energy resources, we respectfully requests that you vote for a "Do Not

Pass” recommendation for HB 1452. Thank you for the opportunity to testify on this important issue.

67 LEGISLATIVE ASSEMBLY**Testimony on HB 1452- CLEAN SUSTAINABLE ENERGY AUTHORITY****Submitted by Sonja Kaye**

I ask you to ponder the following questions as they relate to changing technology. Would it have made sense for steam tractor manufactures to continue their research and development when customers much preferred the lighter, more efficient, and less expensive combustion engine tractors? How much money do you sink into your old model tractor before you realize it makes more sense to switch to an entirely different model? Just as it no longer makes sense to continue research and development on steam tractors, it no longer makes sense to invest in fossil fuel efficiencies to pretend that they are clean and sustainable. I strongly urge you to reject this bill.

Investing in clean, sustainable energy is an important goal for ND. Unfortunately, this bill is a complete farce for those genuinely interested in achieving this goal. This bill includes a twisted and perverse definition of the word “sustainable,” and is a threat to our future and our pocketbooks, especially the pocketbooks of Minnkota Power customers. This bill promotes discriminatory and least value energy in the marketplace and seeks to ensure confidentiality, potentially hiding abuses from the trust of ND citizens.

“Sustainable” is an adjective, a descriptive word meaning “able to be maintained at a certain rate or level.”¹ It is not a “technology.” If we are talking about the sustainable use of natural resources, we are talking about the continued use of a natural resource which can go on indefinitely without an adverse effect on future generations. Sustainability is not guaranteed by adding technology.

One of the purposes of the bill is to diversify and grow the state’s economy, however this bill will never achieve these goals. It is not possible to diversify by staying within the same box. This bill is clearly intended to keep the fossil fuel industry alive regardless of true sustainability. Furthermore, there is not a chance in hell that this proposed “authority” would be capable of objectively deciphering true affordability and reliability characteristics of projects supporting fossil fuels when it is in their financial interest to keep these industries alive. To put this mix of voting members aka the “clean sustainable authority” in charge of making recommendations to the legislative assembly on matters of environmental, social and governance policy is not only deeply unethical but wildly ludicrous.

If proponents of this bill genuinely want to promote sustainability, they need to ask the right questions. While, it is certainly amazing what technology can do for us these days, like removing carbon from lignite coal, the question is not “**can we do it?**” The question is, “**is it worthwhile, and the most cost effective, best option out there?**” HB 1452 seeks to answer the first question and does not even invite the other questions to the table.

The appointed seven voting members that are invited to the table (voting members) are as follows,

- A. *One member appointed by the legislative management to serve as chairman*
- B. *Two members appointed by the lignite research council*

1

https://www.google.com/search?q=sustainable+def&rlz=1C1CHBF_enUS899US899&oq=sustainable+def&aqs=chrome..69i57j0i433j0l2j0i395l6.6117j1j15&sourceid=chrome&ie=UTF-8

- C. *Two members appointed by the oil and gas research council*
- D. *One member appointed by the renewable energy council and*
- E. *One member appointed by the western Dakota energy association*

Very explicitly, you have five members appointed by the lignite oil and gas industry. (WDEA promotes oil gas and coal) (Letters B,C, and E) The remaining two spots could very easily be filled by lignite, oil and gas representatives, as well. This is a blatant omission of representation from the renewable energy sector. **Furthermore**, the representative from the Renewable Energy Council belongs to an organization that has no representation from the renewable energy industries either. Furthermore, this bill gives too much power to the Industrial commission and, it appears, there is no one appointed to this “authority” that understands interconnected grid systems.

If you really want objective voting for this council, you do not appoint anybody from these industries as voting members. Objectivity comes from experts outside these industries.

While fossil fuels have played an important role in ND history, the cold hard truth is that fossil fuels will never be clean and sustainable without posing significant financial and ecological risks to ND citizens. Simple laws of physics and economics cannot be broken.

I am a customer of Cass County Electric Cooperative which is supplied by Minnkota Power Cooperative.

The mission of Minnkota is to keep our electricity the best energy value in the region.

I am appalled to find my energy supplier supporting projects that lowers the energy value in our region. It is a complete violation of their mission and flies in the face of 50 years of progress in the electricity energy business.

Supporters of this bill will have you think we can just create value out of thin air for industries that are no longer viable, such as lignite coal, but economics and the reality of the changing electricity industry does not support this idea. Subsidizing the fossil fuel industry by continuing to pour money into technology that is doomed to fail from the outset is horrible waste of my taxpayer money.

We have other better viable options that would contribute to a vibrant and stable economy. This bill would not let those options even see the light of day.

Another point of concern that I have is the pandering to people’s fears of the loss of reliability on the grid. Let us not use electric grid reliability as an excuse for bad projects. The ultimate and federally

recognized grid authority(s) on reliability is MISO (and SPP.) I have yet to see a recommendation from them that we spend more money on fossil fuel technology to maintain reliability of the electric grid.

MISO REGION RELIABILITY IMPERATIVE – Dec. 2020 Draft 4

Public @

<https://cdn.misoenergy.org/MISO%20Response%20to%20the%20Reliability%20Imperative504018.pdf>

1. **Market Redefinition:** The initiatives in this category aim to ensure that resources with the types of capabilities and attributes the system needs will be available in all 8,760 hours of the year. This is important because as noted above, the region is increasingly facing reliability risks outside of the summer peak-load months that historically posed the greatest challenges. Specific efforts in this area include providing a longer-term and deeper assessment of system needs across all hours of the year, including required capabilities such as flexibility; shifting to verifying sufficient generation adequacy across all hours of the year; improving how resources are accredited; ensuring that prices accurately reflect market conditions, especially during emergencies; and development of market products that provide the right incentives for resources to maintain system reliability.

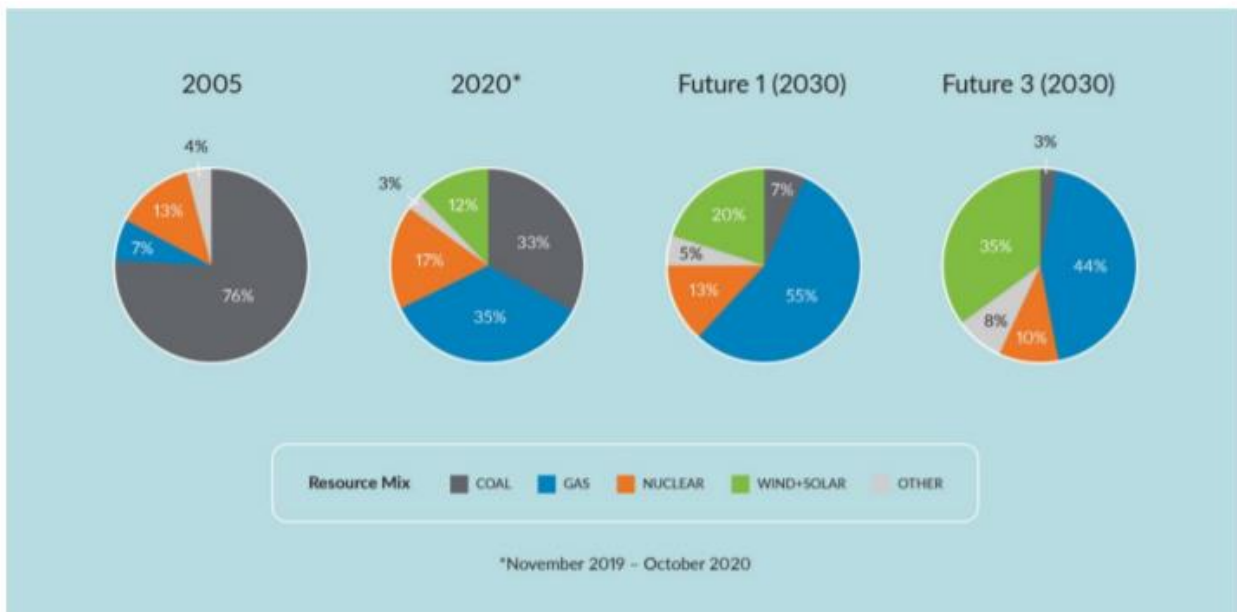
2. **Long Range Transmission Planning:** This effort is designed to identify what transmission the region will need going forward as the electric industry continues to evolve. For example, building additional transmission is especially crucial to support the continued growth of large-scale wind and solar, since those resources are often located far from load centers. A robust transmission plan can also reduce the cost of electricity for consumers by signaling better locations for resource siting that deliver fuel cost savings, decarbonization, and flexibility.

3. **Operations of the Future:** This effort is designed to ensure that MISO will have the kinds of skills, processes, and technologies it will need to effectively manage both wholesale and retail connected resources. For example, this initiative will leverage artificial intelligence, machine learning and advanced analytics among other tools to help future MISO control-room operators effectively forecast, visualize, and manage grid uncertainty. It will also help MISO to better manage maintenance and “pre-position” the grid ahead of system changes such as weather.

4. **Market System Enhancements:** This category of work is designed to transform MISO’s

historical system—which was built in the early 2000’s—into a more flexible and secure system that will meet the needs for years to come. Current systems and technology are not capable of accommodating the increasing demands for new, reliability-driven market enhancements and fully leveraging the opportunities of new resource types such as storage and residential generation options (like rooftop solar) to meet future challenges. This initiative will employ flexible architecture and analysis to support the evolving resource mix and future-state processes for operating MISO markets.

MISO Generation Mix (% of MWh)

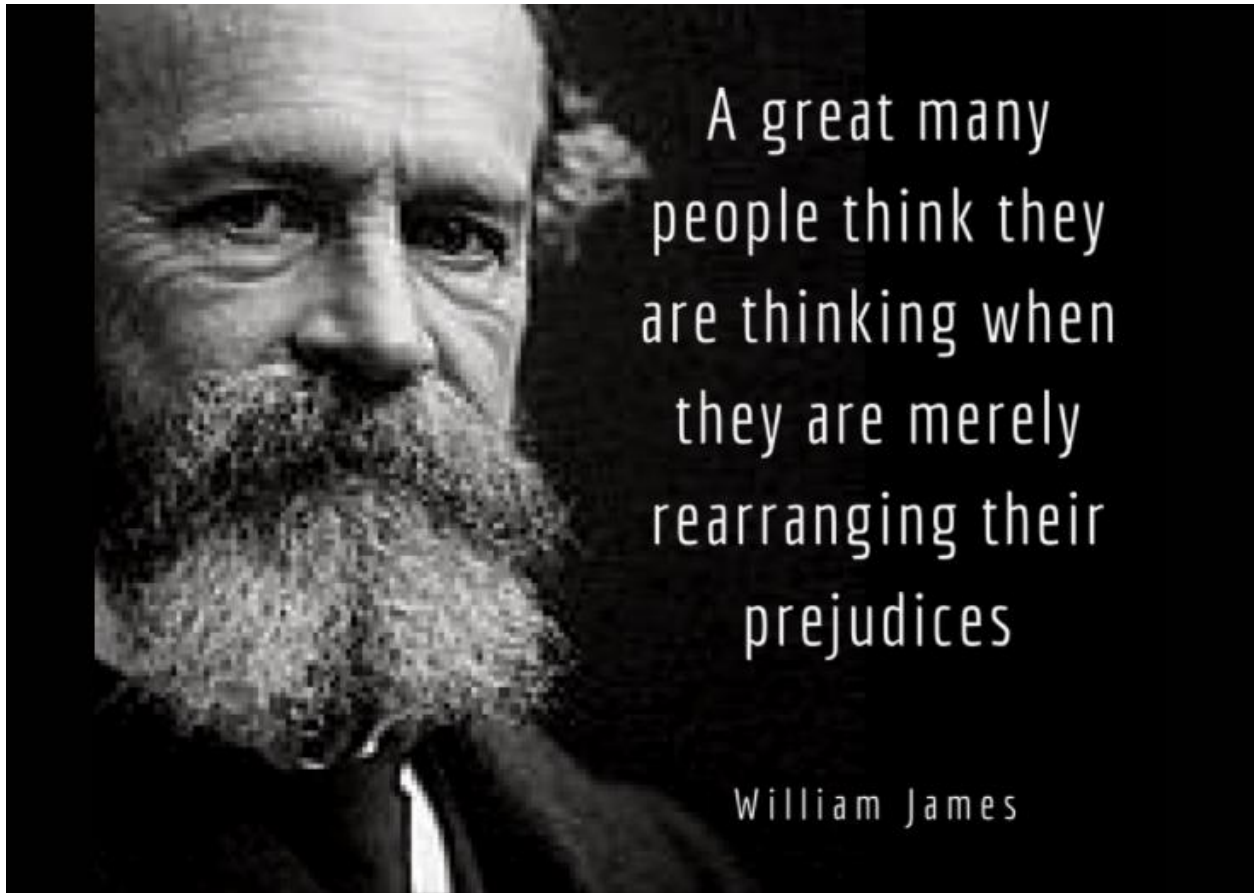


2

The stars of the new clean and sustainable energy future are wind and solar and energy storage, with the possible honorable mention to natural gas due to its ramping flexibility.

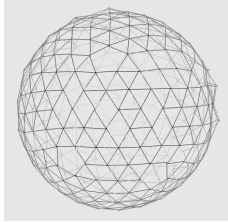
Just as it makes no sense to dump money into steam tractors research and development, it makes no sense to dump money into fossil fuel efficiencies, pretending it makes them clean and sustainable. I again urge you to reject this bill.

² <https://cdn.misoenergy.org/MISO%20Response%20to%20the%20Reliability%20Imperative504018.pdf>



A great many
people think they
are thinking when
they are merely
rearranging their
prejudices

William James



SYNTHESIS.EARTH

01-27-21

RE: NEUTRAL TESTIMONY FOR HB 1452

HB 1452 seeks to create a Clean Sustainable Energy Authority and allocate 25 million dollars from the General Fund to support energy technology grants to “enhance the production of clean sustainable energy.”

Historically, government investment in emerging technology has been a win-win for both private enterprise and public policy. Many technological innovations we enjoy today – like the Internet – were created with taxpayer funding.

That said, other forms of government subsidy – such as those given to established industries - have traditionally done nothing more than enrich private business at the expense of taxpayers.

HB 1452 – as written – occupies an uneven middle ground between attempting to fund emerging clean energy innovations by propping up legacy energy industries. This is suboptimal. As such, we are providing neutral testimony in the hopes that the bill may be made better during the amendment process.

The first suboptimal area of HB 1452 is the composition of the 7 voting members of the Clean Sustainable Energy Authority. 5 of the 7 members come from extractive industries. This will likely bias the Authority towards innovative solutions that purport to help extractive industries. This is suboptimal because innovative solutions follow no particular ideology or business model. The most optimal composition of a Fund designed to spur innovation would be one that considered all possibilities in equal measure. As such, our first recommendation would be to amend HB 1452 to create more equitable representation in the seven-member voting block, not only in terms of greater representation from the renewable energy industry, but also representation from at least one Tribal college.

The second suboptimal area of HB 1452 is its lack of transparency. As written, HB 1452 has no open records requirement, and the Authority may withhold information regarding applicants, consultants, and any funding decision. This is suboptimal from a public policy standpoint. Between the composition of the voting members of the Authority and the secrecy of its decision-making, a perception is created that this Fund is nothing more than a slush fund to help

offset the research and development of North Dakota's extractive industries. Instead, we recommend a gradual transparency requirement that would expose the Authority's decision-making process over time so that the people and lawmakers of North Dakota can fully assess the value of the Authority's investments and ensure they have enough data to continue to justify any ongoing appropriations. While there is some necessity to protect the trade secrets and intellectual property of applicants, it should not outweigh the public's interest in transparent governance, and a gradual transparency requirement would be able to accomplish both ends.

The last suboptimal area of HB 1452 is in the Powers and Duties of the Commission, Subheading 2, which states that the Commission may "acquire, purchase, hold, use, lease, license, sell, transfer, or dispose of any interest in an asset necessary for clean sustainable energy technology development to facilitate the production, transportation, distribution, or delivery of clean energy commodities produced in the state as a purchases of last resort." This power is way too broad. In essence, it would allow the Commission to bail out any industry, company, or entity that it deems "necessary" to "facilitate" pretty much anything involving "clean energy commodities". Given that none of these terms are well-defined, this gives the Commission extremely broad powers to interfere in markets and otherwise upset free enterprise with absolutely zero input from the People or the Legislature. As such, we recommend this entire section be removed from HB 1452 to ensure that the sanctity of the free market is not imperiled by governmental overreach.

Sincerely,
Ryan Warner
Synthesis.Earth

Comments on HB 1452

Chairman Porter, and members of the committee, my name is Charlie Gorecki. I am the CEO of the University of North Dakota (UND) Energy & Environmental Research Center, more commonly known as the EERC. The EERC is a nonteaching arm of UND, and under the auspices of the state of North Dakota, we are focused on providing practical pioneering solutions to the nation's vexing challenges at the nexus of energy and the environment.

The EERC is pleased to provide the following brief commentary regarding the challenges facing North Dakota's energy producers and our views on how HB 1452 could facilitate the sustainable development of North Dakota's abundant natural resources that are so vital to our existing and future economy. Our world-renowned Bakken resource represents approximately 10% of current domestic oil production. Similarly, our Fort Union lignite resource represents the largest minable lignite resource on the planet, with more than 800 years of minable resource at current mining rates. Finally, our state leads the nation in the production of barley, durum wheat, sunflowers, flaxseed, and honey and ranks among the top few producers of numerous additional agricultural commodities. Put simply, our state is a critical producer of those natural resources that mobilize, energize, and feed the world. Today, we see all of North Dakota's phenomenal natural resource production platforms undergoing severe economic hurdles. In addition, these platforms are challenged by global and domestic federal policies that demand a reduced environmental footprint and scrutinized by investors demanding sustainable technology for natural resource production.

In the last legislative session, the legislature established the EERC as the State Energy Research Center and provided funds to facilitate exploratory energy research. These funds, administered

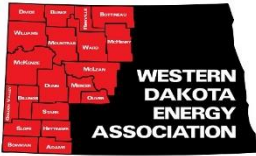
through the State Energy Research Center, have allowed the bright minds at the EERC to develop nascent energy and environmental technologies with substantial future potential for the next generation of energy production. We greatly appreciate the state's support and see that investment already paying dividends, with an increase in invention and in the attraction of federal and commercial dollars for further development of several technologies.

For many years prior to the establishment of the EERC as the State Energy Research Center, and continuing today, the EERC has worked closely with industry, the state, and the federal government to research, develop, and demonstrate emerging technologies. Much of this research, development, and demonstration has been made possible through matching of significant industry investment with investment from the legislatively enabled Oil & Gas Research Program, the Lignite Research, Development & Demonstration Program, and the Renewable Energy Program. These research programs have provided essential funds to advance promising energy and environmental technologies that enhanced the lives of our citizens, our economy, and our environment.

The EERC believes that HB 1452 would provide critical funds to facilitate the deployment of clean and sustainable energy technologies in their final stages of development to help those technologies reach commercial reality. Essentially, HB 1452 provides the funds that encourage those first deployers of emerging technology to take that final leap to implementation.

First movers could be projects where CO₂ is captured from North Dakota's minemouth lignite-fired power plants and ethanol facilities, compressed, transported to, and injected into North

Dakota's Bakken petroleum system for enhanced oil recovery and carbon storage. Projects like this would not only further enhance the production of all these natural resources but would also reduce the environmental footprint of those activities, satisfying the societal demands of a rapidly evolving and challenging global market. Similarly, projects catalyzed with this funding could facilitate the deployment of energy storage technologies that provide critical resilience and reliability to our electrical grid that transports increasingly larger amounts of renewable energy.



WESTERN DAKOTA ENERGY ASSOCIATION

EXECUTIVE COMMITTEE

January 28, 2021

Shannon Holter
President
City of Bowbells

Testimony of:
Geoff Simon, Lobbyist #144
in support of HB 1452
House Energy and Natural Resources Committee

Trudy Ruland
Vice President
Mountrail County

Chairman Porter and Committee members:

Supt. Leslie Bieber
Alexander PSD

On behalf of the city, county and school district members of the Western Dakota Energy Association (WDEA), we wish to express strong support for House Bill 1452 to establish a clean sustainable energy authority and a clean sustainable energy fund. Our association represents North Dakota civic leaders and citizens who live in the oil, gas and coal-producing counties. The livelihood of many of these communities depend on the success of the energy industry, and they in turn provide vital services that support energy development.

Daryl Dukart
Dunn County

Zach Gaaskjolen
City of Stanley

Supt. Shon Hocker
Dickinson PSD

Our association board of directors includes county commissioners, mayors, council members and school superintendents from communities throughout western North Dakota. The legislation before you is about the future of North Dakota's fossil fuel industry, and our member communities will live in that future. The future could be bleak if the anti-fossil fuel agenda of the Biden administration prevails, or it could be very bright if we are able to embrace new technologies to ensure the economic viability and sustainability of the oil, gas and coal industries.

Supt. Tim Holte
Stanley PSD

Lyn James
City of Bowman

David Montgomery
Williams County

Some might ask why WDEA should have a member on the authority that would be created by HB 1452. I think I've answered that question. It's because our members live in energy-producing counties, so have a powerful incentive to see the industry succeed. Our members have expertise and experience in fostering energy research and development. Two former WDEA presidents currently serve on the Oil & Gas Research Council, and another of our board members serves on the Lignite Research Council.

John Phillips
Coal Conversion
Counties

Supt. Brad Rinas
Washburn PSD
Coal Conversion
Counties

We urge the committee's support of HB 1452, and should funding be available, we would suggest the \$25 million appropriation be increased.

Thank you for the opportunity to submit testimony. I would be pleased to answer questions if you have any.

2021 HOUSE STANDING COMMITTEE MINUTES

Energy and Natural Resources Committee Coteau AB Room, State Capitol

HB 1452
2/4/2021

relating to a clean sustainable energy authority and a clean sustainable energy fund; relating to an exemption from procurement services for energy programs; to provide a continuing appropriation; to provide an appropriation; to provide a transfer; and to provide a report

Chairman Porter opened the hearing at **10:55 AM**

Present: Representatives Porter, Damschen, Anderson, Bosch, Devlin, Heinert, Keiser, Lefor, Marschall, Roers Jones, M Ruby, Zubke, Guggisberg, and Ista.

Discussion Topics:

- Low emission technology
- Clean Sustainable Energy Authority
- Comprehensive energy policy
- EmPower Commission

Rep Bosch moved to adopt the amendment 03002, seconded by Rep Lefor. Voice vote. Motion carried.

Rep Bosch moved a Do Pass as Amended and Rerefer to Appropriations.

Representatives	Vote
Representative Todd Porter	Y
Representative Chuck Damschen	Y
Representative Dick Anderson	AB
Representative Glenn Bosch	Y
Representative Bill Devlin	Y
Representative Ron Guggisberg	N
Representative Pat D. Heinert	Y
Representative Zachary Ista	N
Representative George Keiser	Y
Representative Mike Lefor	Y
Representative Andrew Marschall	Y
Representative Shannon Roers Jones	Y
Representative Matthew Ruby	Y
Representative Denton Zubke	Y

Motion carried. 11 – 2 – 1 Rep Bosch is carrier.

#5456, #5457 Rep Glenn Bosch, District 30, Amendment 21.0904.03002

11:10 AM hearing closed on HB 1452.

Kathleen Davis, Committee Clerk

February 3, 2021

JP
2/4/21

PROPOSED AMENDMENTS TO HOUSE BILL NO. 1452

Page 1, line 3, after "reenact" insert "sections 17-01-01 and 17-07-01 and"

Page 1, line 4, after the first "to" insert "low-emission technology, the energy policy commission, and"

Page 1, after line 7, insert:

"SECTION 1. AMENDMENT. Section 17-01-01 of the North Dakota Century Code is amended and reenacted as follows:

17-01-01. ~~25x'25 initiative~~Low-emission technology.

The legislative assembly adopts the ~~25x'25~~low-emission technology initiative with the goal that ~~not later than January 1, 2025,~~ the agricultural, forestry, natural resources, and working land of the United States should provide from renewable resources~~low-emission technology~~ not less than twenty-five percent of the total energy consumed in the United States and continue to produce safe, abundant, and affordable food, fuel, feed, and fiber. Increasing America's ~~renewable energy~~low-emission technology use will bring new ~~technologies~~advancements to market and save consumers money, reduce the nation's dependence on oil from the Middle East, create good new jobs in rural America, ~~and clean up the air and,~~ reduce urban smog, and address global warming issues. As used in this initiative, ~~renewable energy~~low-emission technology includes biofuels, solar, wind, hydropower, geothermal, carbon recycling, carbon sequestration, use of waste heat, recycling, ~~low-emission technologies that create or use hydrogen,~~ coal, oil, natural gas, and energy efficiency initiatives. ~~The 25x'25 initiative will benefit agriculture and forestry, the environment, and national security and provide economic growth.~~Investing and acknowledging a commitment to low-emission technologies allows the state to use its abundant natural resources for the benefit of current and future generations. This initiative provides North Dakota consumers with affordable, reliable, and sustainable energy for the benefit of the state's economy and communities.

SECTION 2. AMENDMENT. Section 17-07-01 of the North Dakota Century Code is amended and reenacted as follows:

17-07-01. Energy policy commission.

1. The energy policy commission is composed of:
 - a. The commissioner of commerce;
 - b. A representative of the agriculture community appointed by the governor;
 - c. A representative recommended by the lignite energy council appointed by the governor;
 - d. A representative recommended by the North Dakota petroleum council appointed by the governor;

- e. A member from the biodiesel or green diesel industry appointed by the governor;
- f. A member from the biomass industry appointed by the governor;
- g. A member from the wind industry appointed by the governor;
- h. A member from the ethanol industry appointed by the governor;
- i. A representative recommended by the North Dakota petroleum marketers association appointed by the governor;
- j. A member from the North Dakota investor-owned electric utility industry appointed by the governor;
- k. A member from the generation and transmission electric cooperative industry appointed by the governor;
- l. A member from the lignite coal-producing industry appointed by the governor;
- m. A member from the refining or gas-processing industry appointed by the governor; and
- n. Additional nonvoting members appointed by the governor.
2. Each member of the commission shall serve for a term of two years, beginning July first, may be reappointed for additional terms, and serves at the pleasure of the governor.
3. The commissioner of commerce is chairman of the commission.
4. The commission shall meet at least ~~four~~^{two} times per biennium or as often as the chairman deems necessary. The commission shall hold at least two public hearings per biennium, ~~at which time interested parties may present testimony in coordination with the state energy research center and allow public input from invited national and regional leaders and interested persons~~ regarding issues pertinent to the state's comprehensive energy policy. The department of commerce shall provide staffing for the commission.
5. The legislative assembly shall develop a comprehensive energy policy for the state. ~~The commission shall monitor progress made toward the goals outlined in the energy policy and make recommendations to the energy policy as needed.~~ In coordination with the state energy research center, the commission shall identify and make recommendations to the clean sustainable energy authority on low-emission technology and advancements in energy efficiencies for the state. The recommendations must include consideration of environmental benefits; advancements or developments that have led to increased economic benefits and positive environmental public health benefits for the citizens and visitors of North Dakota, including cleaner air, soil, and water; improved efficiencies; reduction of waste; lower carbon-intensive agricultural products; and units of energy. The recommendations also may consider other factors, including environmental, social, and governance policies and the effect on financial or capital markets. The commission shall monitor the progress of implementing and achieving environmental benefits through the state's

9/2
2/1/2

comprehensive energy policy. The commission shall report biennially to the legislative management.

98
2/4/21

6. The members of the commission who are not state employees are entitled to mileage and expenses as provided by law for state officers and employees. Unless otherwise provided in this subsection, the expenses of appointed members are to be paid by the department of commerce. A state employee who is a member of the commission must receive that employee's regular salary and is entitled to mileage and expenses, to be paid by the employing agency."

Page 3, line 17, remove "The authority shall make recommendations to the legislative assembly on a"

Page 3, remove lines 18 through 20

Page 3, line 21, remove "4."

Page 3, line 23, replace "5." with "4."

Page 6, line 4, replace "1" with "3"

Page 6, line 9, replace "\$25,000,000" with "\$40,000,000"

Renumber accordingly

REPORT OF STANDING COMMITTEE

HB 1452: Energy and Natural Resources Committee (Rep. Porter, Chairman) recommends **AMENDMENTS AS FOLLOWS** and when so amended, recommends **DO PASS** and **BE REREFERRED** to the **Appropriations Committee** (11 YEAS, 2 NAYS, 1 ABSENT AND NOT VOTING). HB 1452 was placed on the Sixth order on the calendar.

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Renumber accordingly

21.0904.03002
Title.

Prepared by the Legislative Council staff for
Representative Bosch
February 3, 2021

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 - d. A representative recommended by the North Dakota petroleum council appointed by the governor;

- e. A member from the biodiesel or green diesel industry appointed by the governor;
 - f. A member from the biomass industry appointed by the governor;
 - g. A member from the wind industry appointed by the governor;
 - h. A member from the ethanol industry appointed by the governor;
 - i. A representative recommended by the North Dakota petroleum marketers association appointed by the governor;
 - j. A member from the North Dakota investor-owned electric utility industry appointed by the governor;
 - k. A member from the generation and transmission electric cooperative industry appointed by the governor;
 - l. A member from the lignite coal-producing industry appointed by the governor;
 - m. A member from the refining or gas-processing industry appointed by the governor; and
 - n. Additional nonvoting members appointed by the governor.
2. Each member of the commission shall serve for a term of two years, beginning July first, may be reappointed for additional terms, and serves at the pleasure of the governor.
 3. The commissioner of commerce is chairman of the commission.
 4. The commission shall meet at least ~~four~~two times per biennium or as often as the chairman deems necessary. The commission shall hold at least two public hearings per biennium, ~~at which time interested parties may present testimony in coordination with the state energy research center and allow public input from invited national and regional leaders and interested persons~~ regarding issues pertinent to the state's comprehensive energy policy. The department of commerce shall provide staffing for the commission.
 5. The legislative assembly shall develop a comprehensive energy policy for the state. ~~The commission shall monitor progress made toward the goals outlined in the energy policy and make recommendations to the energy policy as needed~~In coordination with the state energy research center, the commission shall identify and make recommendations to the clean sustainable energy authority on low-emission technology and advancements in energy efficiencies for the state. The recommendations must include consideration of environmental benefits; advancements or developments that have led to increased economic benefits and positive environmental public health benefits for the citizens and visitors of North Dakota, including cleaner air, soil, and water; improved efficiencies; reduction of waste; lower carbon-intensive agricultural products; and units of energy. The recommendations may also consider other factors, including environmental, social, and governance policies and the effect on financial or capital markets. The commission shall monitor the progress of implementing and achieving environmental benefits through the state's

comprehensive energy policy. The commission shall report biennially to the legislative management.

6. The members of the commission who are not state employees are entitled to mileage and expenses as provided by law for state officers and employees. Unless otherwise provided in this subsection, the expenses of appointed members are to be paid by the department of commerce. A state employee who is a member of the commission must receive that employee's regular salary and is entitled to mileage and expenses, to be paid by the employing agency."

Page 3, line 17, remove "The authority shall make recommendations to the legislative assembly on a"

Page 3, remove lines 18 through 20

Page 3, line 21, remove "4."

Page 3, line 23, replace "5." with "4."

Page 6, line 4, replace "1" with "3"

Page 6, line 9, replace "\$25,000,000" with "\$40,000,000"

Renumber accordingly

Sixty-seventh
Legislative Assembly
of North Dakota

HOUSE BILL NO. 1452

Introduced by

Representatives Bosch, Delzer, Mitskog, Pollert, Porter

Senators Holmberg, Patten, Bell, Wardner

1 A BILL for an Act to create and enact a new chapter to title 54 of the North Dakota Century
2 Code, relating to a clean sustainable energy authority and a clean sustainable energy fund; to
3 amend and reenact sections 17-01-01 and 17-07-01 and subsection 5 of section 54-44.4-02 of
4 the North Dakota Century Code, relating to low-emission technology, the energy policy
5 commission, and an exemption from procurement services for energy programs; to provide a
6 continuing appropriation; to provide an appropriation; to provide a transfer; and to provide a
7 report.

8 **BE IT ENACTED BY THE LEGISLATIVE ASSEMBLY OF NORTH DAKOTA:**

9 **SECTION 1. AMENDMENT.** Section 17-01-01 of the North Dakota Century Code is
10 amended and reenacted as follows:

11 **17-01-01. ~~25x'25 initiative~~ Low-emission technology.**

12 The legislative assembly adopts the ~~25x'25~~ low-emission technology initiative with the goal
13 that ~~not later than January 1, 2025,~~ the agricultural, forestry, natural resources, and working
14 land of the United States should provide from ~~renewable resources~~ low-emission technology not
15 less than twenty-five percent of the total energy consumed in the United States and continue to
16 produce safe, abundant, and affordable food, fuel, feed, and fiber. Increasing America's
17 ~~renewable energy~~ low-emission technology use will bring new ~~technologies~~ advancements to
18 market and save consumers money, reduce the nation's dependence on oil from the Middle
19 East, create good new jobs in rural America, and clean up the air and reduce urban smog and
20 address global warming issues. As used in this initiative, ~~renewable energy~~ low-emission
21 technology includes biofuels, solar, wind, hydropower, geothermal, carbon recycling, carbon
22 sequestration, use of waste heat, recycling, ~~low-emission technologies that create or use~~
23 hydrogen, coal, oil, natural gas, and energy efficiency initiatives. ~~The 25x'25 initiative will benefit~~
24 ~~agriculture and forestry, the environment, and national security and provide economic~~

1 ~~growth~~ Investing and acknowledging a commitment to low-emission technologies allows the
2 state to use its abundant natural resources for the benefit of current and future generations.
3 This initiative provides North Dakota consumers with affordable, reliable, and sustainable
4 energy for the benefit of the state's economy and communities.

5 **SECTION 2. AMENDMENT.** Section 17-07-01 of the North Dakota Century Code is
6 amended and reenacted as follows:

7 **17-07-01. Energy policy commission.**

8 1. The energy policy commission is composed of:

- 9 a. The commissioner of commerce;
- 10 b. A representative of the agriculture community appointed by the governor;
- 11 c. A representative recommended by the lignite energy council appointed by the
12 governor;
- 13 d. A representative recommended by the North Dakota petroleum council appointed
14 by the governor;
- 15 e. A member from the biodiesel or green diesel industry appointed by the governor;
- 16 f. A member from the biomass industry appointed by the governor;
- 17 g. A member from the wind industry appointed by the governor;
- 18 h. A member from the ethanol industry appointed by the governor;
- 19 i. A representative recommended by the North Dakota petroleum marketers
20 association appointed by the governor;
- 21 j. A member from the North Dakota investor-owned electric utility industry
22 appointed by the governor;
- 23 k. A member from the generation and transmission electric cooperative industry
24 appointed by the governor;
- 25 l. A member from the lignite coal-producing industry appointed by the governor;
- 26 m. A member from the refining or gas-processing industry appointed by the
27 governor; and
- 28 n. Additional nonvoting members appointed by the governor.

29 2. Each member of the commission shall serve for a term of two years, beginning July
30 first, may be reappointed for additional terms, and serves at the pleasure of the
31 governor.

- 1 3. The commissioner of commerce is chairman of the commission.
- 2 4. The commission shall meet at least ~~four~~^{two} times per biennium or as often as the
3 chairman deems necessary. The commission shall hold at least two public hearings
4 per biennium, ~~at which time interested parties may present testimony~~ in coordination
5 with the state energy research center and allow public input from invited national and
6 regional leaders and interested persons regarding issues pertinent to the state's
7 comprehensive energy policy. The department of commerce shall provide staffing for
8 the commission.
- 9 5. The legislative assembly shall develop a comprehensive energy policy for the state.
10 ~~The commission shall monitor progress made toward the goals outlined in the energy~~
11 ~~policy and make recommendations to the energy policy as needed~~ In coordination with
12 the state energy research center, the commission shall identify and make
13 recommendations to the clean sustainable energy authority on low-emission
14 technology and advancements in energy efficiencies for the state. The
15 recommendations must include consideration of environmental benefits;
16 advancements or developments that have led to increased economic benefits and
17 positive environmental public health benefits for the citizens and visitors of North
18 Dakota, including cleaner air, soil, and water; improved efficiencies; reduction of
19 waste; lower carbon-intensive agricultural products; and units of energy. The
20 recommendations may also consider other factors, including environmental, social,
21 and governance policies and the effect on financial or capital markets. The
22 commission shall monitor the progress of implementing and achieving environmental
23 benefits through the state's comprehensive energy policy. The commission shall report
24 biennially to the legislative management.
- 25 6. The members of the commission who are not state employees are entitled to mileage
26 and expenses as provided by law for state officers and employees. Unless otherwise
27 provided in this subsection, the expenses of appointed members are to be paid by the
28 department of commerce. A state employee who is a member of the commission must
29 receive that employee's regular salary and is entitled to mileage and expenses, to be
30 paid by the employing agency.

1 **SECTION 3.** A new chapter to title 54 of the North Dakota Century Code is created and
2 enacted as follows:

3 **Definitions.**

4 As used in this chapter:

- 5 1. "Authority" means the clean sustainable energy authority.
- 6 2. "Clean" means a technology or concept that reduces emissions to the air, water, or
7 land and meets or exceeds state and federal environmental regulations.
- 8 3. "Commission" means the industrial commission.
- 9 4. "Fund" means the clean sustainable energy fund.
- 10 5. "Program" means the clean sustainable energy program.
- 11 6. "Sustainable" means a technology or concept that allows the use of a natural resource
12 to be maintained or enhanced through increased efficiency and life cycle benefits
13 without adversely impacting energy security, affordability, reliability, resilience, or
14 national security.

15 **Clean sustainable energy authority - Purpose.**

16 There is created the clean sustainable energy authority to support research, development,
17 and technological advancements through partnerships and financial support for the large scale
18 development and commercialization of projects, processes, activities, and technologies that
19 reduce environmental impacts of energy production. The purpose of the financial support is to
20 enhance the production of clean sustainable energy, to make the state a world leader in the
21 production of clean sustainable energy, and to diversify and grow the state's economy.

22 **Clean sustainable energy authority - Membership - Meetings.**

- 23 1. The clean sustainable energy authority consists of fifteen members, including seven
24 voting members and eight ex officio, nonvoting members.
- 25 2. The seven voting members consist of:
 - 26 a. One member appointed by the legislative management to serve as chairman;
 - 27 b. Two members appointed by the lignite research council;
 - 28 c. Two members appointed by the oil and gas research council;
 - 29 d. One member appointed by the renewable energy council; and
 - 30 e. One member appointed by the western Dakota energy association.
- 31 3. The eight ex officio, nonvoting members consist of:

- 1 a. One member appointed by the North Dakota outdoor heritage fund advisory
2 board;
- 3 b. The commissioner of commerce or the commissioner's designee;
- 4 c. The director of the department of environmental quality or the director's designee;
- 5 d. The director of mineral resources or the director's designee;
- 6 e. The director of the North Dakota pipeline authority or the director's designee;
- 7 f. The director of the North Dakota transmission authority or the director's designee;
- 8 g. The director of the state energy research center or the director's designee;
- 9 h. The president of the Bank of North Dakota or the president's designee;
- 10 4. The term of office for the chairman is two years. The term of office for the other voting
11 members is four years, and the other voting members may not serve more than two
12 consecutive terms. The terms of office for the voting members commence on July first.
13 The initial terms for the voting members of the authority must be staggered following a
14 method determined by the authority.
- 15 5. The authority shall meet at least semiannually. The chairman shall call a meeting upon
16 written request from three voting members of the authority. Four voting members is a
17 quorum at any meeting.

18 **Clean sustainable energy authority - Duties - Report.**

- 19 1. The authority shall make recommendations to the commission for program guidelines,
20 including eligibility criteria for entities to receive funding under this chapter.
- 21 2. The authority shall make recommendations to the commission for grant awards, loan
22 approvals, or other financial assistance to provide funding to support research,
23 development, and technological advancements for the large scale development and
24 commercialization of projects, processes, activities, and technologies that reduce
25 environmental impacts in accordance with this chapter. Any projects, processes,
26 activities, and technologies selected by the commission for funding must have been
27 recommended by the authority, must demonstrate feasibility based on a technical
28 review, must have other sources of financial support, and must achieve the priorities
29 and purposes of the program. At the request of the authority, the Bank of North Dakota
30 shall provide a recommendation regarding the economic feasibility of a project,
31 process, activity, or technology under consideration by the authority. The Bank shall

1 review the business plan, financial statements, and other information necessary to
2 provide a recommendation.

3 ~~3. The authority shall make recommendations to the legislative assembly on a~~
4 ~~comprehensive environmental, social, and governance policy for the state. The~~
5 ~~authority shall monitor the progress made to implement the environmental, social, and~~
6 ~~governance policy.~~

7 ~~4.~~ The authority may consult with any other state agency necessary to carry out the
8 purposes under this chapter.

9 ~~5.4.~~ Each biennium, the authority shall provide a written report to the legislative
10 management regarding its activities.

11 **Clean sustainable energy program - Powers and duties of the commission.**

12 1. The commission is granted all the powers necessary to carry out the purposes of this
13 chapter, including the power to:

14 a. Provide grants, loans, or other forms of financial assistance to qualified entities
15 for the research, demonstration, development, and commercialization of projects,
16 processes, activities, and technologies that reduce environmental impacts and
17 use energy sources derived from within the state. Other forms of financial
18 assistance include venture capital investments and interest rate buydowns. The
19 commission must require an entity to provide assurance of financial and other
20 types of support that demonstrate a commitment to the project, process, activity,
21 or technology.

22 b. Enter into contracts or agreements to carry out the purposes of this chapter,
23 including contracting for the administration of the program.

24 c. Keep accurate records of all financial transactions performed under this chapter.

25 d. Cooperate with any private, local, state, or national organization to make
26 contracts and agreements for programs that advance the mission of the program.

27 e. Accept loan repayments, donations, grants, contributions, or gifts from any public
28 or private source to carry out the purposes of this chapter, which must be
29 deposited in the clean sustainable energy fund.

30 f. Make guidelines necessary to carry out the purposes of this chapter, including
31 guidelines relating to the ownership of intellectual property.

- 1 2. The commission may acquire, purchase, hold, use, lease, license, sell, transfer, or
2 dispose of any interest in an asset necessary for clean sustainable energy technology
3 development to facilitate the production, transportation, distribution, or delivery of
4 clean energy commodities produced in the state as a purchases of last resort.
- 5 3. The commission shall provide administrative support to the authority for the operation
6 of the program, including the preparation of forms, review of applications, and ongoing
7 review of any contracts. The commission may contract with a public or private entity to
8 provide technical assistance necessary to implement the purposes of this chapter.
- 9 4. The commission is not subject to the reporting requirements under chapter 54-60.1.

10 **Clean sustainable energy program - Access to records.**

- 11 1. To the extent the commission or authority determines the materials or data consist of
12 trade secrets or commercial, financial, or proprietary information of individuals or
13 entities applying to or contracting with the commission or receiving commission
14 services under this chapter, materials and data submitted to, made by, or received by
15 the commission or authority, are not public records subject to section 44-04-18 and
16 section 6 of article XI of the Constitution of North Dakota, and are subject to section
17 44-04-18.4.
- 18 2. A person or entity may file a request with the commission to have material designated
19 as confidential under subsection 1. The request must contain any information required
20 by the commission and must include at least the following:
 - 21 a. A general description of the nature of the information sought to be protected.
 - 22 b. An explanation of why the information derives independent economic value,
23 actual or potential, from not being generally known to other persons.
 - 24 c. An explanation of why the information is not readily ascertainable by proper
25 means of other persons.
 - 26 d. A general description of any person that may obtain economic value from
27 disclosure or use of the information, and how the person may obtain this value.
 - 28 e. A description of the efforts used to maintain the secrecy of the information.
- 29 3. Any request under subsection 2 is confidential. The commission shall examine the
30 request and determine whether the information is relevant to the matter at hand and is
31 a trade secret under the definition in section 47-25.1-01 or 44-04-18.4. If the

1 commission determines the information is either not relevant or not a trade secret, the
2 commission shall notify the requester and the requester may ask for the return of the
3 information and the request within ten days of the notice. If no return is sought, the
4 information and request are public record.

5 4. The names or identities of independent technical reviewers on a project or program
6 are confidential, may not be disclosed by the commission, and are not public records
7 subject to section 44-04-18 or section 6 of article XI of the Constitution of North
8 Dakota.

9 **Clean sustainable energy fund - Continuing appropriation.**

10 There is created in the state treasury the clean sustainable energy fund. The fund consists
11 of all moneys transferred to the fund by the legislative assembly; interest upon moneys in the
12 fund; principal and interest payments to the fund; and donations, grants, and other contributions
13 received by the commission for deposit in the fund. All moneys in the fund are appropriated to
14 the commission on a continuing basis to provide grants, loans, and other financial assistance
15 and for administrative and operating costs of the authority and program pursuant to the
16 provisions under this chapter.

17 **SECTION 4. AMENDMENT.** Subsection 5 of section 54-44.4-02 of the North Dakota
18 Century Code is amended and reenacted as follows:

19 5. Procurements by the industrial commission for energy-related programs under
20 chapters 17-05, 54-17.5, 54-17.6, 54-17.7, section 43 of this Act, and 54-63 and under
21 those statutes in title 38 authorizing the industrial commission to perform well and hole
22 pluggings, reclamation work, equipment removal, leak prevention, and similar work.

23 **SECTION 5. APPROPRIATION - TRANSFER - CLEAN SUSTAINABLE ENERGY FUND.**

24 There is appropriated out of any moneys in the general fund in the state treasury, not otherwise
25 appropriated, the sum of ~~\$25,000,000~~\$40,000,000, which the office of management and budget
26 shall transfer to the clean sustainable energy fund, during the biennium beginning July 1, 2021,
27 and ending June 30, 2023.

2021 HOUSE APPROPRIATIONS

HB 1452

2021 HOUSE STANDING COMMITTEE MINUTES

Appropriations Committee Brynhild Haugland Room, State Capitol

HB 1452
2/9/2021

Relating to low-emission technology, the energy policy commission, and an exemption from procurement services for energy programs; to provide a continuing appropriation
--

2:56 Chairman Delzer Called the meeting to order for HB 1452, roll call was taken;

Attendance	P/A
Representative Jeff Delzer	P
Representative Keith Kempenich	A
Representative Bert Anderson	P
Representative Larry Bellew	P
Representative Tracy Boe	P
Representative Mike Brandenburg	P
Representative Michael Howe	P
Representative Gary Kreidt	P
Representative Bob Martinson	P
Representative Lisa Meier	P
Representative Alisa Mitskog	P
Representative Corey Mock	A
Representative David Monson	P
Representative Mike Nathe	P
Representative Jon O. Nelson	P
Representative Mark Sanford	P
Representative Mike Schatz	P
Representative Jim Schmidt	P
Representative Randy A. Schobinger	P
Representative Michelle Strinden	P
Representative Don Vigesaa	P

Discussion Topics:

- Clean Sustainable Energy
- Low emission technology
- Project Commission

2:56 Representative Bosch Introduces and testifies in favor of HB 1452 and passes out his amendment (**testimony #6262**)

3:07 Committee Discussion

Additional written testimony: No Written Testimony

House Appropriations Committee

HB 1452

February 9, 2021

Page 2

3:17 Chairman Delzer Closes the hearing for HB 1452

Risa Berube

House Appropriations Committee Clerk

21.0904.03003
Title.

Prepared by the Legislative Council staff for
Representative Bosch
February 8, 2021

PROPOSED AMENDMENTS TO HOUSE BILL NO. 1452

Page 1, line 3, after "reenact" insert "sections 17-01-01 and 17-07-01 and"

Page 1, line 4, after the first "to" insert "low-emission technology, the energy policy commission, and"

Page 1, after line 7, insert:

"SECTION 1. AMENDMENT. Section 17-01-01 of the North Dakota Century Code is amended and reenacted as follows:

17-01-01. ~~25x'25 initiative~~Low-emission technology.

The legislative assembly adopts the ~~25x'25~~low-emission technology initiative with the goal that ~~not later than January 1, 2025,~~ the agricultural, forestry, natural resources, and working land of the United States should provide from renewable resourceslow-emission technology not less than twenty-five percent of the total energy consumed in the United States and continue to produce safe, abundant, and affordable food, fuel, feed, and fiber. Increasing America's renewable energylow-emission technology use will bring new technologiesadvancements to market and save consumers money, reduce the nation's dependence on oil from the Middle East, create good new jobs in rural America, ~~and~~clean up the air ~~and~~ reduce urban smog, and address global warming issues. As used in this initiative, renewable energylow-emission technology includes biofuels, solar, wind, hydropower, geothermal, carbon recycling, carbon sequestration, use of waste heat, recycling, low emission technologies that create or use hydrogen, coal, oil, natural gas, and energy efficiency initiatives. ~~The 25x'25 initiative will benefit agriculture and forestry, the environment, - and national security and provide economic growth~~Investing and acknowledging a commitment to low-emission technologies allows the state to use its abundant natural resources for the benefit of current and future generations. This initiative provides North Dakota consumers with affordable, reliable, and sustainable energy for the benefit of the state's economy and communities.

SECTION 2. AMENDMENT. Section 17-07-01 of the North Dakota Century Code is amended and reenacted as follows:

17-07-01. Energy policy commission.

1. The energy policy commission is composed of:
 - a. The commissioner of commerce;
 - b. A representative of the agriculture community appointed by the governor;
 - c. A representative recommended by the lignite energy council appointed by the governor;
 - d. A representative recommended by the North Dakota petroleum council appointed by the governor;

- e. A member from the biodiesel or green diesel industry appointed by the governor;
 - f. A member from the biomass industry appointed by the governor;
 - g. A member from the wind industry appointed by the governor;
 - h. A member from the ethanol industry appointed by the governor;
 - i. A representative recommended by the North Dakota petroleum marketers association appointed by the governor;
 - j. A member from the North Dakota investor-owned electric utility industry appointed by the governor;
 - k. A member from the generation and transmission electric cooperative industry appointed by the governor;
 - l. A member from the lignite coal-producing industry appointed by the governor;
 - m. A member from the refining or gas-processing industry appointed by the governor; and
 - n. Additional nonvoting members appointed by the governor.
2. Each member of the commission shall serve for a term of two years, beginning July first, may be reappointed for additional terms, and serves at the pleasure of the governor.
 3. The commissioner of commerce is chairman of the commission.
 4. The commission shall meet at least ~~four~~two times per biennium or as often as the chairman deems necessary. The commission shall hold at least two public hearings per biennium, ~~at which time interested parties may present testimony in coordination with the state energy research center and allow public input from invited national and regional leaders and interested persons~~ regarding issues pertinent to the state's comprehensive energy policy. The department of commerce shall provide staffing for the commission.
 5. The legislative assembly shall develop a comprehensive energy policy for the state. ~~The commission shall monitor progress made toward the goals outlined in the energy policy and make recommendations to the energy policy as needed~~In coordination with the state energy research center, the commission shall identify and make recommendations to the clean sustainable energy authority on low-emission technology and advancements in energy efficiencies for the state. The recommendations must include consideration of environmental benefits; advancements or developments that have led to increased economic benefits and positive environmental public health benefits for the citizens and visitors of North Dakota, including cleaner air, soil, and water; improved efficiencies; reduction of waste; lower carbon-intensive agricultural products; and units of energy. The recommendations also may consider other factors, including environmental, social, and governance policies and the effect on financial or capital markets. The commission shall monitor the progress of implementing and achieving environmental benefits through the state's

comprehensive energy policy. The commission shall report biennially to the legislative management.

6. The members of the commission who are not state employees are entitled to mileage and expenses as provided by law for state officers and employees. Unless otherwise provided in this subsection, the expenses of appointed members are to be paid by the department of commerce. A state employee who is a member of the commission must receive that employee's regular salary and is entitled to mileage and expenses, to be paid by the employing agency."

Page 2, line 6, replace "seven" with "eight"

Page 2, line 8, replace "seven" with "eight"

Page 2, line 12, replace "One member" with "Two members"

Page 3, line 17, remove "The authority shall make recommendations to the legislative assembly on a"

Page 3, remove lines 18 through 20

Page 3, line 21, remove "4."

Page 3, line 23, replace "5." with "4."

Page 6, line 4, replace "1" with "3"

Page 6, line 9, replace "\$25,000,000" with "\$40,000,000"

Re-number accordingly

2021 HOUSE STANDING COMMITTEE MINUTES

Appropriations Committee Brynhild Haugland Room, State Capitol

HB 1452
2/16/2021

Relating to low-emission technology, the energy policy commission

11:44 Chairman Delzer Opens the meeting for HB 1452;

Representatives	P/A
Representative Jeff Delzer	P
Representative Keith Kempenich	P
Representative Bert Anderson	P
Representative Larry Bellew	P
Representative Tracy Boe	P
Representative Mike Brandenburg	P
Representative Michael Howe	P
Representative Gary Kreidt	P
Representative Bob Martinson	P
Representative Lisa Meier	P
Representative Alisa Mitskog	P
Representative Corey Mock	P
Representative David Monson	P
Representative Mike Nathe	P
Representative Jon O. Nelson	P
Representative Mark Sanford	P
Representative Mike Schatz	P
Representative Jim Schmidt	P
Representative Randy A. Schobinger	P
Representative Michelle Strinden	P
Representative Don Vigesaa	P

Discussion Topics:

- Amendment
- Continuing appropriation

11:45 Chairman Delzer Explains the bill and amendment 21.0904.04001

11:48 Representative Meier Move the amendment 21.0904.04001

Representative Mock- Second

11:48 Voice Vote Motion Carries

Representative Meier- Motion for a Do Pass as amended

Representative Mock- Second

Further discussion

11:50 Roll Call Vote was taken;

Representatives	Vote
Representative Jeff Delzer	Y
Representative Keith Kempenich	Y
Representative Bert Anderson	Y
Representative Larry Bellew	N
Representative Tracy Boe	Y
Representative Mike Brandenburg	N
Representative Michael Howe	Y
Representative Gary Kreidt	Y
Representative Bob Martinson	Y
Representative Lisa Meier	Y
Representative Alisa Mitskog	Y
Representative Corey Mock	Y
Representative David Monson	N
Representative Mike Nathe	Y
Representative Jon O. Nelson	Y
Representative Mark Sanford	Y
Representative Mike Schatz	Y
Representative Jim Schmidt	Y
Representative Randy A. Schobinger	N
Representative Michelle Strinden	Y
Representative Don Vigesaa	Y

11:51 Motion Carries 17-4-0 Representative Bosch will carry

Additional written testimony: No Written Testimony

11:52 Chairman Delzer- Closes the meeting for HB 1452

Risa Berube,

House Apportions Committee Clerk

JB
2/16/21

PROPOSED AMENDMENTS TO ENGROSSED HOUSE BILL NO. 1452

Page 4, line 23, replace "fifteen" with "sixteen"

Page 4, line 23, replace "seven" with "eight"

Page 4, line 25, replace "seven" with "eight"

Page 4, line 29, replace "One member" with "Two members"

Page 5, line 16, replace "Four" with "Five"

Page 5, after line 17, insert:

"6. The authority may not forward a recommendation to the commission unless the recommendation fulfills the purposes of this chapter and is approved by a majority of the voting members of the authority."

Page 6, line 6, after "activities" insert "and the program's financial impact on state revenues and the state's economy"

Renumber accordingly

REPORT OF STANDING COMMITTEE

HB 1452, as engrossed: Appropriations Committee (Rep. Delzer, Chairman) recommends **AMENDMENTS AS FOLLOWS** and when so amended, recommends **DO PASS** (17 YEAS, 4 NAYS, 0 ABSENT AND NOT VOTING). Engrossed HB 1452 was placed on the Sixth order on the calendar.

Page 4, line 23, replace "fifteen" with "sixteen"

Page 4, line 23, replace "seven" with "eight"

Page 4, line 25, replace "seven" with "eight"

Page 4, line 29, replace "One member" with "Two members"

Page 5, line 16, replace "Four" with "Five"

Page 5, after line 17, insert:

"6. The authority may not forward a recommendation to the commission unless the recommendation fulfills the purposes of this chapter and is approved by a majority of the voting members of the authority."

Page 6, line 6, after "activities" insert "and the program's financial impact on state revenues and the state's economy"

Renumber accordingly

2021 SENATE ENERGY AND NATURAL RESOURCES

HB 1452

2021 SENATE STANDING COMMITTEE MINUTES

Energy and Natural Resources Committee Peace Garden Room, State Capitol

HB 1452
3/19/2021

relating to low-emission technology, the energy policy commission, and an exemption from procurement services for energy programs; to provide a continuing appropriation; to provide an appropriation; to provide a transfer; and to provide a report.

Hearing called to order all Senators Present: **Roers, Bell, Schaible, Piepkorn, Patten, and Kreun. [9:28]**

Discussion Topics:

- Definition of Clean Renewable Energy
- Coal Baseload standards

[9:28:00] **Rep Glenn Bosch** - Testimony in Favor #10105

[9:39:33] **Ron Ness** - NDPC - Testimony in Favor #10074

[9:41:51] **Eric Nelson** - Creedence Energy Services - Testimony in Favor

#10098 [9:51:11] **David Straley** - North American Coal - Testimony in Favor

[9:53:13] **Jason Bohrer** - Lignite Energy Council - Testimony in Favor

[9:59:36] **Charlie Gorecki** - EERC - Testimony in Favor #10095

[10:14:36] **Lance Gaebe** - NDEPA - Testimony in Favor

[10:15:20] **Gerald Bachmeier** - NDEPA - Testimony in Favor #10093

[10:21:45] **Josh Teigen** - NDDoC - Testimony in Favor

[10:28:55] **Stacey Dahl** - Minnkota Power Coop - Testimony in Favor #10061

[10:33:53] **Cody Two Bears** - Indigenized Energy - Testimony in Opposition

#10022, #10007

[10:40:36] **Ryan Warner** - Synthesis Earth - Testimony in Opposition #10106

[10:55:37] **Dustin Gawrylow** - NDWDN - Testimony in Opposition #9961 and #9682

[10:59:43] **Scott Skokos** - ND DRC - Testimony in Opposition #10038

[11:03:16] **Sonja Kaye** - Fargo ND - Testimony in Opposition #10089

Additional written testimony: #8902, 9127, 9681, 10108, 10099, 10117

Hearing Adjourned [11:09]

Sheila Froehlich, Committee Clerk

Chairman Kreun and members of the Energy and Natural Resources Committee, for the record I'm Glenn Bosch and I represent Bismarck's District 30.

I'm here today to introduce House Bill 1452.

HB-1452 establishes a Clean Sustainable Energy Authority for the purpose of supporting research and implementation of 21st century technologies and to advance low emissions, minimal footprint energy production in ND. The goal of HB-1452 is to establish ND as a world leader in clean, sustainable energy. This bill will encourage the development of large-scale projects and technologies that increase energy production while reducing impacts, ultimately growing, and diversifying the ND economy.

HB1452 develops a framework for the state acting in partnership with private industry to bring new and emerging technologies into commercial use while also updating the state's energy priorities, goals, and initiatives.

As we look inside the bill, I'd like to direct you to the amendment I handed out and with the chairman's approval I'd like to review this version of the bill as it represents some changes that I believe make the bill better and provides clearer direction.

Before walking through of the bill, I'd like to draw your attention to the definition section of the bill on page 4, as two words (clean and sustainable) may be the most important part of what we are considering today, as they frame the challenges and opportunities that are in front of our states energy industry. Clean as defined is the reality that marketplace, other states, and the federal government want and in some cases are requiring reduced emission energy. Today, our energy producers recognize that for their long-term viability, they need to produce what the markets are asking for.

Reading the definition of sustainable you'll see words like, energy and national security, affordability, reliability, and resilience. If we spoke to people of Texas who spent last month without heat, with frozen water pipes, standing in line to fill a water jug or propane tank, I'm confident that they'd take all the sustainable energy we could produce. These events make it clear, that as policy makers we must support developing technologies that ensure this scenario doesn't happen in ND.

As we walk through the bill, please note that as amendments have been added, sections have moved, and for clarity, I'm going to address the sections out of sequence.

So, starting with Section 3 the bill, we create the Authority which is modeled after existing authorities under the ND Industrial Commission and establishes its membership from representatives of oil, gas, lignite, and renewal energy. It also establishes that nonvoting technical advisors would evaluate proposed projects to determine the technical merits and feasibility of any application, including potential benefits of the development of the technology, and the contribution it makes to the economic diversity of the state.

Section 2 focuses on the Empower Commission and directs the Commission to be a resource available to the clean sustainable energy authority and for Empower to make recommendations on low-emission technology advancements in the state. These recommendations must include both environmental and economic benefits to the citizens of North Dakota. The recommendations also may consider other factors, including how environmental, social, and governance policies effect both financial and capital markets.

Additionally, the Empower Commission will also make recommendations on policies to ensure the availability of affordable, reliable, resilient, and sustainable energy in the state. These recommendations should consider how to expand opportunities to diversify the use of North Dakota's natural resources, which may increase state tax revenues.

Empower will also be required to study and evaluate critical energy infrastructure and made recommendations to ensure the state's energy policy supports grid reliability and resiliency and supports sufficient dispatchable generation capacity to avoid brownouts, blackout, or outages.

The Empower commission will also report its recommendations to the legislative assembly as we continue to develop our states energy policies.

Section 1 of the bill amends what currently is known 25x25 initiative. Ten years ago, the 25x25 initiative was established with the goal that by no later than 2025, 25% of all the energy produced in the United States would come from renewable energy sources. Today that goal is achieved. The new language focuses the state of ND on the advancements of low emission technology and defines that low emission can be any energy source that benefits from energy efficiency initiatives and also benefits the state's economy and communities, including biofuels, wind, solar, coal, oil, natural gas, hydrogen, and carbon sequestration.

Lastly, Section 4 of the bill provides for a \$40M transfer from the General Fund to newly established Clean Sustainable Energy Fund and directs the authorities board to make recommendations to the Industrial Commission for grants, loans, or other financial assistance that supports the commercialization of large-scale projects and processes that enhance the advancement of low-emission sustainable technologies. It also requires the authority to report to legislative management the financial impact on state revenues and economy.

With that, Chairman and committee members I hope you will give this important legislation your favorable consideration and I'll stand for questions.



House Bill 1452
Testimony of Ron Ness
Senate Energy and Natural Resources Committee
March 19, 2021

Chairman Kruen and members of the Committee, my name is Ron Ness, president of the North Dakota Petroleum Council. The North Dakota Petroleum Council represents more than 650 companies in all aspects of the oil and gas industry, including oil and gas production, refining, pipeline, transportation, mineral leasing, consulting, legal work, and oilfield service activities in North Dakota. I appear before you today in support of House Bill 1452.

The timing is right to be hearing this bill, given the assault on fossil fuels the Biden Administration has initiated. These drastic actions should concern every American who heats their home, drives a car, tractor, or truck, wears comfy clothes, uses a cell phone or computer, or just lives a normal life. North Dakotans appreciate the importance of fossil fuels to our lives, jobs, families, communities, education, infrastructure, and our state budget. We know the climate activists are coming for us, so what can we do as a state to ensure we do not leave 800 years of coal in the ground or leave one of the top ten oil fields in the world under-capitalized and under-developed? House Bill 1452 is an important first step in ushering in the next generation of energy production that consumers are demanding. This doesn't mean no more fossil fuels; this means we innovate, and we do it better. House Bill 1452 would provide the framework and funding to support large-scale demonstration projects to improve and advance energy production in our state while reducing impacts.

North Dakota has a strong record of facilitating partnerships to produce innovative results and we know the value of our resources. Let's show the world what we can accomplish through technology and innovation to reduce our carbon emissions and environmental footprint and change the tone of tomorrow.

It's time we act. Let's pass House Bill 1452 and reinvest in our state's resources to become the world leader in the production of clean sustainable energy. NDPC member Eric Nelson with Creedence Energy Services is joining us today to discuss the technology his company is developing and the great potential it has for value-added energy.

Sixty-Seventh Legislative Assembly of North Dakota
North Dakota Senate
Energy and Natural Resources Committee

Clean Sustainable Energy Legacy Authority - HB 1452
Eric P. Nelson Testimony
March 19th, 2021

Chairman Kreun, members of the committee,

Thank you for this opportunity to speak in favor of HB 1452 to create a Clean Sustainable Energy Authority. My name is Eric P. Nelson. I'm proud to serve as Technical Services Manager for Creedence Energy Services. Creedence is a North Dakota grown company that has evolved to become the Williston Basin's leading oil and gas production chemical provider. This is a competitive arena of technological development. R&D resources are allocated in a targeted fashion based on feasibility, potential profitability, and expected return on investment. I argue that HB 1452 can help tip the scales to favor investment in North Dakota.

Before I continue on HB 1452, you'll forgive me for taking the time to note that in that competitive environment, competing against companies with New York Stock Exchange tickers, Creedence has grown from three cousins founding the company in 2015 to a Creedence team now of over 70 team members with good, stable compensation in challenging and rewarding roles. With Creedence's recent recapitalization of ProChem Energy Services in the Oklahoma, Texas, and New Mexico area, the Creedence family now operates in geographic areas accounting for 90% of the shale oil production in North America.

Again, this industry is focused on technological development of chemical applications. Here's an exciting example relevant to this legislation. Creedence has recently made considerable strides into an emerging marketplace in North Dakota, enhanced oil recovery solutions, or EOR. With our partner, Locus Bio-Energy, we will be piloting two applications of our biosurfactant in horizontal Bakken wells to increase oil recovery. Briefly, this biosurfactant, a nanoparticle, with a size smaller than human DNA, is pumped into existing oil wells in a volume of a water. For the pilot wells next week, that will be 2700 barrels of freshwater with roughly 3-4% biosurfactant additive. The additive, with its smaller size, will penetrate the tight pore spaces of the Bakken reservoir rock and mobilize adhered oil. Not unlike you dishwashing soap mobilizing grease off dirty dishes.

Our minimum expectation based on results from other basins is an annual incremental production increase of 25%. For an older well making 25 BOPD, that increase would equate to an additional 2,174 barrels of oil in a year. A significant uptake from its projected 9,419-barrel forecast. These are quite conservative estimates.

I don't need describe how the last year has affected North Dakota's oil and gas industry. This group is quite aware of that and the corresponding decrease in both public and private revenues into the state. The time for emerging technologies to replace depleting oil production and find new revenue streams has come.

Currently, a re-frac of an existing well can cost upwards of \$4.5 million. The capital available to drill new wells is extremely limited and assets in the Williston Basin is in a tough competition with other oil plays for that money. Technology like this can mobilize oil in existing assets, without capital expenditure, at a fraction of the cost of re-fracking.

Innovation is needed now if we don't want to be idle passengers to regulation and foreign market pressures. We think technologies, like the one we are deploying next week, are a critical part to North Dakota maintaining its role as global leader in energy production.

Without grant funding from the NDIC through Oil and Gas Research Council, it is unlikely we would be piloting two wells next week. It would be months down the road. That funding was critical to accelerating development of this technology. It reduced the financial risks associated with trialing a technology new to the Bakken and Three Forks systems. It was a thoughtful, meaningful process in which the technical reviewers provided us valuable feedback and posed questions showing good stewardship of public money.

And it is a safe bet with the state's money. We know that because we have case studies from other basins. Those case studies exist, in part, because other states are incentivizing this kind of innovation. Texas offers a 50% tax reduction on oil operators using this same technology for a period of 10 years. Many of our relevant case studies are from the Permian. HB 1452 could help push North Dakota forward as a laboratory for innovation because I don't know about you, but I'm not interested in waiting for technology updates from other states.

HB 1452 would take the next step to making North Dakota an innovation leader by accelerating energy development and commercializing viable technologies. I can share what that would look like for our biosurfactant example. If these pilot wells prove successful, and a sufficient demand is created, it is quite feasible that a fermentation plant will be warranted in North Dakota. This fermentation plant would use consume North Dakota canola oil and North Dakota sugar beets to produce the biosurfactant that curb the production decline of North Dakota oil wells. Funds from HB 1452 could reduce the initial hurdle to move forward with such a plant.

While I have no doubt there are several other promising projects this would apply to, this could just be the beginning for this technology. Establishing a biosurfactant fermentation plant in the state could open doors to several other industries. Biosurfactants can be used in cosmetics, personal care products and probiotics. They can be used to boost agricultural crop production. They have been shown effective at delivering probiotics to livestock, even reducing methane emissions by cows by 80%. They are also used in delivering nanoparticle pharmaceuticals not all that dissimilar to technology used in the mRNA covid vaccines. So while we are focused on flattening the oil production decline curve, there are other curves biosurfactants can help flatten, as well.

I ask for a "Do Pass" recommendation on HB 1452, to help projects like our's come to commercialization in weeks and months instead of years.

Thank you for your time.

Testimony of Charles D. Gorecki
CEO
Energy & Environmental Research Center, UND
House Bill No. 1452
March 19, 2021

Establishment of the clean, sustainable energy authority and associated funding supports the use of North Dakota energy resources and the advancement of technologies for clean, reliable, low-emission energy production. The funding would benefit transformational energy technologies that are on the cusp of commercial viability. The Clean, Sustainable Energy Authority and Fund would advance projects and technologies that were likely developed and advanced through the State Energy Research Center, the Oil and Gas Research Council, the Renewable Energy Council, and the Lignite Energy Council. The outcome of this bill is the last piece needed to integrate this important work and build upon the collective knowledge of these distinguished organizations.

Through the State Energy Research Center, the Energy & Environmental Research Center (EERC) has been developing the energy technologies of the future. These technologies, if further expanded, could be the types of projects to power North Dakota and our economy in 5 to 10 years. The EERC has worked over the past year on a collaborative, comprehensive energy sustainability model that can demonstrate, using systems dynamics, the complexities and necessary pieces that ensure reliable and environmentally responsible energy sources for our citizens and their quality of life. This model, in combination with other regional studies, can provide the framework for HB 1452's goal to create a comprehensive energy policy for North Dakota's future.

Our research through funding through the research councils has led to advances in all areas of energy in North Dakota. Initiatives such as Project Tundra, CO₂ capture and geologic storage at Red Trail Energy, iPIPE, the Bakken Production Optimization Program, the Plains CO₂ Reduction Partnership Initiative, and research in underground storage of produced natural gas and recycling of water used in oil and gas operations are working toward even more efficient and environmentally responsible ways to use and produce energy. This work brings value to North Dakota by maintaining secure baseload power with a low CO₂ footprint, supporting the current industry and its growth, creating new revenue streams, achieving the state's gas capture requirements, commercializing technologies that could "unlock" enhanced oil recovery in the Bakken, revitalizing conventional oil fields, and conserving North Dakota's resources.

North Dakota is a leader in technologies for low-emission energy. Through partnerships with industry and support from state and federal entities, an all-of-the-above approach to energy production is a reality. Because of low-emission technologies like carbon capture and storage, choosing between clean, sustainable energy or reliable sources is not necessary. We can have both. This bill supports further development of those technologies and their implementation in a coordinated, sustainable way, bringing value to North Dakota for years to come.



Testimony of Gerald Bachmeier

President of North Dakota Ethanol Producers Association and CEO of Red Trail Energy

To the Senate Energy and Natural Resources Committee
In Support of House Bill 1452

March 19, 2021

Chairman Kruen and members of the committee:

My name is Gerald Bachmeier, I am the president of the North Dakota Ethanol Producers Association, which represents North Dakota's six ethanol plants, industry stakeholders and associated businesses. I am here today to support House Bill 1452, which would establish a Clean Sustainable Energy Authority to propose comprehensive environmental, social, and governance policies and to make recommendations for grants and loans from a clean sustainable energy fund to help commercialize projects.

North Dakota's ethanol industry contributes more than \$623 million annually to the state's economy and provides thousands of direct and indirect jobs. North Dakota's economy is dependent on agriculture and ethanol is a big deal here- the industry converts 200 million bushels of corn (40 to 60% of the state's average corn crop) into 543 million gallons of ethanol and 1.5 million tons of dried distillers grains for livestock feed.

Ethanol is a renewable fuel used in more than 95% of the gasoline consumed in United States motor vehicles. A recent study found that greenhouse gas emissions from corn ethanol are 46% lower than gasoline. We compliment the state's foresight in creating a regulatory and incentive framework that have already supported investments in environmental and social energy alternatives like ethanol.

The Ethanol Producers Association supports the proposal in HB 1452 to create an energy fund to help provide a mechanism to enable investing in emerging technologies and next generation energy opportunities. Expansion of sustainable product production and processes can lead to opportunities for value-added projects that support high paying jobs, enhanced economic activity, and add more value to our agriculture and other products.

I want to offer an example of how we are adding value to an already clean energy product. North Dakota ethanol plants are leading the nation in low carbon ethanol. The state Renewable Energy Council, along with private industry dollars, have invested in research to help commercialize emerging carbon dioxide capture technologies. Ethanol plants produce 18 pounds of nearly pure CO₂ for every bushel of corn processed. Our industry recognizes an opportunity to capture that CO₂ and use it to generate additional revenue.

At Red Trail Energy we are working in coordination with the Energy and Environmental Research Center a Carbon Capture and Storage project, which has the potential for tens of millions of dollars of economic impact per year. This project not only provides an additional revenue opportunity for use of the CO₂, but capturing the carbon improves the Carbon Intensity (CI) value of the ethanol as evaluated by several West Coast markets. Ethanol produced with a lower CI score is differentiated from other ethanol and is worth more in California and Oregon due to their Low Carbon Fuel Standards.

Our facility and other North Dakota producers are investing in projects like these, to further process ethanol, corn or other agriculture products into higher-value products, to help generate additional revenue for owners of Red Trail and our other ethanol plants. Additional investments in renewable and alternative energies are good for farmers, communities, and North Dakota.

Ethanol Producers appreciate the inclusion in HB 1452 of voting members of the Renewable Energy Council on the proposed Clean Sustainable Energy Authority. The ethanol industry supports House Bill 1452, and we also ask for your favorable consideration of our friendly amendment.

I will try to answer any questions you may have.



North Dakota House Bill 1452

Testimony of Stacey Dahl – Minnkota Power Cooperative
Senate Energy and Natural Resources Committee
March 19, 2021

Chairman Kreun and Members of the Senate Energy and Natural Resources Committee,

Thank you for the opportunity to testify in support of HB 1452. By way of background, I work as Senior Manager of External Affairs for Minnkota Power Cooperative, headquartered in Grand Forks. Minnkota is a non-profit electricity generation and transmission cooperative and is the sole supplier of electricity for eleven non-profit cooperative distribution companies and the operating agent for Northern Municipal Power Agency which serves twelve small cities in eastern North Dakota and northwest Minnesota. Minnkota serves approximately 140,000 customers over a 35,000 square mile area.

In recent years, I have also had the privilege of serving on the leadership team working to develop Project Tundra. Tundra is a bold initiative to build the world's largest carbon capture facility in North Dakota, and represents a vision for our state's energy future, consistent with the goals of HB 1452. The project is exploring innovative technologies that are in their final engineering phase, and if constructed, would capture approximately 90% of the CO₂ emissions from our largest coal unit at the Milton R. Young Station. Plans are also in the works to capture additional CO₂ emissions from the adjacent smaller generating unit, and as a result, 4 million metric tons of CO₂ would be captured and sequestered annually. For context, that has the equivalent emissions reduction of permanently taking over 800,000 gas-powered vehicles off the road. While Minnkota is spearheading this effort, this project would not be at this stage of development without the tremendous state and federal support provided, as well as expertise by the Energy and Environmental Research Center at University of North Dakota. The project remains promising, yet there are critical challenges remaining.

Through years of research and development, leading scientists and geologists have gained very high confidence in our ability to safely capture and store large volumes of CO₂ through Project Tundra. However, the project still has to overcome hurdles before a decision can be made to move forward with construction. Carbon capture utilization and storage projects are complex as well as capital and risk intensive. Financing the project, as well as contending with the anti-fossil fuel movement more broadly, will provide challenges in the coming year. However, there is broad bipartisan support for carbon capture projects, recognizing they are critical to a carbon managed future. HB 1452 is a positive step to streamline the effort and resources to help projects commercialize – and realize our state's role as a world leader in clean energy technology development.

Minnkota Power Cooperative supports HB 1452, and encourages the Committee to recommend a Do Pass on this bill.



INDIGENIZED ENERGY

March 19th, 2021

Senate Energy &
Natural Resources Committee
600 E Boulevard Ave, Bismarck, ND 58505

Hello, Chairman Curt Kreun and members of the committee. My name is Cody Two Bears, I am from Cannon Ball, on the Standing Rock Indian Reservation. I am the Executive Director of Indigenized Energy, and the owner of the largest solar farm in the State of North Dakota to date.

As a person who works with world leaders in solar technology, such as Tesla, Solar City & Cypress Creek Renewables, I have seen what they're doing with solar, backing it up with large scale energy storage systems and smart grid improvements. They're advancing rapidly. In comparison, the engineers that helped build our farm were shocked with how far behind we are here in North Dakota with our energy policies regarding solar energy and our attitudes toward renewables.

There is clearly a strong need for a "clean sustainable energy authority" like this bill suggests. However, there are two large problems with this bill: First, there are no voting members from solar, wind, geothermal or other truly clean sustainable energy authorities on this "clean sustainable energy authority." Yet, fossil fuels are well-represented. If we think we can fool people and the federal government, by calling fossil fuels "clean and sustainable" we are short-sighted. Banks don't want to invest in fossil fuels and customers increasingly don't want to buy it. As an energy exporting state, that's a recipe for future economic failure.

Without solar, wind, geothermal, and clean energies having equal representation and voting power in this authority, this bill will do nothing to prepare North Dakota to thrive in the future energy market. The future market is one of renewables coupled with energy storage and a smart grid that can react to quick shifts in energy loads. Research and development into those smart grid improvements and storage would be a wise investment.

Page 1 of 2

Address:
7102 Hwy 1806
Cannon Ball, ND 58528

Indigenized Energy
Executive Director:
Cody Two Bears

Contact:
Cody@CovenantSolar.org
Phone - 701-516-2276



INDIGENIZED ENERGY

March 19th, 2021

Senate Energy &
Natural Resources Committee
600 E Boulevard Ave, Bismarck, ND 58505

Second, this bill does not include any Native American (Indigenous) representation. This is a problem, especially considering our Indigenous people are leading the sustainable energy movement here in North Dakota in many ways: For example, the largest solar farm in North Dakota is Indigenous-owned on Standing Rock, the greenest college in North Dakota is Indigenous - it is Turtle Mountain Community College, which is 99% renewable already with lots of geothermal and wind energy, and more renewables coming. While even in the fossil fuel sector, Ft. Berthold Indian Reservation pays millions of dollars into North Dakota coffers in oil tax revenues, yet it is not represented here and doesn't have a seat at the table in this bill. This is a problem.

I can not support the bill as it is, but if it had equal representation with sustainable (renewable) energies, such as solar, wind and geothermal - and if it had transparency as well as Native American representation then I could support this legislation.

I ask you to vote no on HB 1452. Thank you. I stand for any questions.

Page 2 of 2

Sincerely,

Cody Two Bears, Executive Director
Indigenized Energy
Enrolled Member, Standing Rock Sioux Tribe

Address:
7102 Hwy 1806
Cannon Ball, ND 58528

Indigenized Energy
Executive Director:
Cody Two Bears

Contact:
Cody@CovenantSolar.org
Phone - 701-516-2276

Chairman Kruen, members of the committee, my name is Ryan Warner. I am custodian of Synthesis.Earth, a connective technology company here in Bismarck, as well as co-owner of Lightspring, an energy technology company headquartered in Bismarck. I am speaking before you in opposition to HB 1452.

If passed, HB 1452 creates a “Clean Sustainable Energy Authority” to dole out public monies to private companies to develop clean sustainable energy.

While “clean sustainable energy” sounds cool, there are major problems with this bill.

First, the voting members who determine what gets funded are almost exclusively represented by oil, gas, and coal interests. This means the innovations funded by this proposed Authority will likely center around “clean coal” and carbon capture technology, among many other moonshot proposals to clean up the oil, gas, and coal industries.

Innovative and creative solutions like the ones targeted by the proposed “clean sustainable energy authority” are now understood to be products of diverse perspectives. The greater the number of divergent perspectives that are brought together into one room to tackle a problem, the more innovative outcomes and solutions will emerge. This is because diverse groups cover for individual blindspots, and the mix of perspectives creates cross-discipline connections that would have never occurred with more homogenous groups.

As reported in the Wall Street Journal last year, “Multiple viewpoints from a variety of industries, economic backgrounds, educational experiences...bring a more complete perspective to developing...relevant solutions. Solving problems regarding what and how to innovate requires the same diversity.”¹

I know first hand how diverse groups can overcome long odds and make a big difference in a short time. As some of you may have noticed, I am a part of an ad hoc group that emerged out of nowhere to fight this bill. We have little money and few resources but within a couple weeks have been able to stand up to the richest and most well-resourced special interests in the state to mount what Ron Ness is now calling “significant opposition”. (Thanks Ron).

We are an ideologically diverse group - consisting of conservatives, moderates, pragmatists, and progressives - and in the process of collaboration have pushed and sharpened each other's ideas to become something greater than the sum of our individual parts. This is the old “Team of Rivals” approach popularized by President Lincoln where he purposely stacked his cabinet with rival perspectives and competing ideas. Eventually, the competition between ideas leads to a synthesis representing the best of all possible worlds and leads to true growth and innovation.

HB 1452 is a form of “innovation” as imagined by people whose only creativity comes from devising new ways to game the system to benefit themselves. In essence, the decision making body of HB 1452 is made up of insiders, elites, and rich special interest groups. The only

¹ <https://deloitte.wsj.com/cio/2020/01/13/foster-innovation-ethical-tech-with-diverse-teams/>

“innovation” a group like that can muster is the kind of innovation that consists of finding new ways to funnel public money into their own pockets.

Now, because “clean coal” and carbon capture tech is unproven and speculative, the bill sponsors of HB 1452 have also decided to protect the intellectual property of private companies, exempting all funding decisions, projects, applicants, and technical reviewers from ND’s open records law. In other words, money will go into this fund, and then it will disappear into thin air to fund something someone somewhere thinks might make things somewhat “cleaner” at some undefined point in the future.

Not only are we forming a team of elites and insiders to funnel \$40 million dollars of public money into their own pockets every 2 years, we are doing it without meaningful public oversight.

Before I conclude, I’d like to take a step back, because there is something at play even worse than poor governance structure and a lack of transparency. It’s the fact that the authors of this bill are using language games to cloak their intent. Think about it, this bill is the product of the governor’s office, the ND Republican Party, and the oil, gas, and coal industries. Our governor is a tech millionaire and advertising genius who often throws his money around to get what he wants. The ND GOP has done such an amazing job winning almost every election in the state that they now enjoy a monopoly on political power in North Dakota. And the oil, gas, and coal industries represent by far the greatest concentration of economic power in the state. Together, these 3 groups have all the power in the world to do exactly what they want and yet they are still afraid to tell us what they’re doing. Instead of showing us their plan, they write up a bill riddled with euphemisms and energy agnostic language to cloak their intentions. I mean, just look at page 1, line 23, where the authors of HB 1452 define “low-emission technology” as “coal, oil, [and] natural gas.” If coal, oil, and natural gas were “low-emission technology” we wouldn’t even need a Clean Sustainable Energy Authority in the first place. What game are they playing?

I don’t have to tell you that public trust in government is at an all-time low. We’ve been lied to, intentionally misled, and buried under an impenetrable layer of bureaucracy. If the authors of this bill can’t even trust us enough to tell us their big plan, then how can we trust them?

If this is such a good plan, then show us. Put the plan in the bill. Maybe it is a great plan, but there’s no way to know. Use accurate and honest language to describe it and then we can talk about it and vet it and maybe even make it better.

The authors of HB 1452 are calling this the “Clean Sustainable Energy Authority,” but as we’ve seen when you look into the details what they really want is the authority to give handouts to the state’s richest private companies to fund unproven technology without any meaningful public oversight. They talk about carbon capture, but the only thing they want to capture is cash. And on top of that they don’t even respect us enough to lay out their plan.

The Clean Sustainable Energy Authority has no clean or sustainable representatives. It’s

expensive PR that creates a secret slush fund for the state's richest special interest groups. As such, I urge a DO NOT PASS designation for HB 1452.

HB 1452 – Testimony by Dustin Gawrylow (Lobbyist #266) North Dakota Watchdog Network

The Clean Sustainable Energy Fund is an open-ended expansion of government.

Based on the makeup of the voting committee, the deck is clearly stacked for using the money and the government program to bailout, subsidize, and prop-up tradition energy. And since we have multiple bills this session to help the coal industry, one can only assume it is to help that industry. At least for a little while.

It is also becoming apparent that the goal of the fund is to use state tax dollars to create a government program that will subsidize speculative technology with the goal of making fossil fuel based energy more marketable to states that have decided they don't want such power sources.

It should also be noted that even though the fiscal note on this bill does not say so, there is a \$40m/biennium continuing appropriation to this Clean Sustainable Energy Fund hiding in the Legacy Earnings Stream bill (HB 1380).

The Legacy Earnings portion of HB 1380 should either be triggered by the passage of HB 1452, or the Legacy Fund earnings provisions from HB 1380 should be placed into HB 1452 so that it is clear that HB 1452's fiscal note is not a one-time expense and that this will be an on-going subsidy and government program.

I will also note that HB 1412 is designed to provide \$35m/biennium in tax relief, while simultaneously increasing subsidies to the Lignite Research Fund.

The \$75m+ between HB 1412 and HB 1452 is almost half of what the fiscal note to completely eliminate the State Corporate Income Tax would be. This would be a much more fair, broad, and effective way to use tax policy.

The legislature should say no to growing government, say no to subsidizing one particular industry, and say no protectionist policies that will only buy certain industries a few more year in an export market that no longer wants coal based power.

By eliminating broad based tax burdens, for all industries, we can move North Dakota forward and expand the economy as a whole.

We oppose both HB 1452 and HB 1380 for these reasons and urge a DO NOT PASS as currently written.

HB 1452 – Testimony by Dustin Gawrylow (Lobbyist #266) North Dakota Watchdog Network

This session, there are several bills that are designed to help create a soft-landing or manage the decline of the coal-fired electrical power industry.

While it is perfectly understandable as to why there is a desire to slow the obsolescence of legacy energy technologies, it is important to remember that not only is North Dakota fighting the federal government's incentive programs regarding alternative energy sources, but that the free market itself is pushing away from fossil fuels.

House Bill 1452's headline reads "Clean Sustainable Energy Authority" but the members on the governance board of this new expansion of government are mostly representatives of existing energy sources. It does not take a very big leap to realize that this is going to be a new government program designed to offer protectionist policies and support for older industries.

To cite a specific problem with the premise of this bill, it bill is extremely open ended and grants the Industrial Commission vast powers on Page 4 Line 15:

"The commission may acquire, purchase, hold, use, lease, license, sell, transfer, or dispose of any interest in an asset necessary for clean sustainable energy technology development to facilitate the production, transportation, distribution, or delivery of clean energy commodities produced in the state as a purchases of last resort."

From what I can tell, this means the Industrial Commission is authorized to bail out and acquire anything it deems relevant to "clean energy". Does the legislature really want to let the Industrial Commission start buying up companies, facilities, or equipment? I doubt it.

This bill is an open-ended bailout masquerading as a clean energy bill.

Let's not spend millions of dollars and expand government this way.

Instead of trying to slow the inevitable, and spend a lot of the taxpayer's money to do it, North Dakota should actively seek to find ways to prepare its workforce for the changes that will be coming.

The people of North Dakota and the workers in the energy industry deserve to hear the truth.

This \$25 million expansion of government should be focused on preparing North Dakota for the changes that are coming. And we should do it before the extreme environmentalists force it to happen artificially at the federal level.

The people who work in the energy industry need leaders who will pave the way to future, not try to build a wall to keep the future at bay.

I urge a DO NOT PASS on this bill and any other idea this session that seeks to create a protectionist bailout system for any industry.

Testimony of Dakota Resource Council
House Bill 1452
March 19th, 2021

1 Chairman Curt Kreun & members of the committee, my name is Scott Skokos and I am
2 testifying on behalf of Dakota Resource Council and our members. Thank you for allowing me
3 to testify today. I stand here today in opposition of HB 1452 as it is currently written.

4 Dakota Resource Council (DRC) is a non-partisan grassroots group of landowners, ranchers,
5 farmers, and other citizens. A key part of our mission is to promote the sustainable use of North
6 Dakota's natural resources. Naturally, we would be in support of establishing a clean sustainable
7 energy authority in ND. In fact, when we first heard about the idea, we were very excited.
8 Unfortunately, upon reading HB 1452, it appears to be more of an Authority to provide funding
9 to special interest groups.

10 The first major issue is the selection for representation for the seven voting members of the
11 authority. On page 4, lines 25-30, HB 1452 outlines who will provide representation, with voting
12 powers, for the clean sustainable energy authority. This "Clean Sustainable Energy Authority"
13 lacks equal representation for all types of energy, including wind and solar industries. While
14 there are two members from the lignite research council and oil & gas research council, there is
15 only two voting members from the renewable energy council. There is no representation from
16 the wind or solar industries. For a clean sustainable energy authority, this appears to be more of a
17 special interest slush fund. We are not opposed to having representation for lignite and oil & gas,
18 however, in addition to the renewable energy council, there should be representation from the
19 solar and wind industries. If the purpose is to truly have clean sustainable energy in ND for the
20 long-term and to reduce the environmental impacts of energy, then we must continue with a true
21 "all-of-the-above" strategy.

22 HB 1452 also does not provide specific requirements on what the funding provided by the
23 authority can be spent on and completely lacks transparency. It only states that it must "reduce
24 environmental impacts of energy production." We would like to see more specific requirements
25 for these grants, loans, and other financial assistance so that the money can be spent wisely. As it
26 is currently written, it appears that the money can be spent on just about anything, no
27 requirements. This Authority is being proposed is going to be funded with public monies and
28 taxpayers deserve to know where their money is going. The lack of transparency in this bill
29 essentially creates a blackhole for public monies. Dakota Resource Council believes that there
30 should be more clearly defined requirements for what the money can be spent on. There needs to
31 be specific parameters included.

32 We understand that with innovative technology and research there are trade secrets and the
33 sharing of confidential information that could jeopardize a project. However, DRC questions the
34 confidentiality around approving grants and other funding from the clean sustainable energy
35 authority. As it is currently written, companies seeking money from the authority can remain
36 secret forever. We think that the advisory should be transparent with how and to who it grants
37 money. Again, the public should know where the money is going. It should only be in very
38 specific situations that information is sealed, and if that is the case, we believe that this
39 information shouldn't be sealed forever, perhaps a limit of 5-10 years. The information should be

40 released at a certain point and there should also be some methodology included in the bill to
41 unseal information for specific cases in which it is imperative to access that information.

42 On page 3, line 4 this bill strikes “which time interested parties may present testimony” in
43 exchange for “in coordination with the state energy research center and allow public input from
44 invited national and regional leaders and interested persons.” Citizens of ND and interested
45 parties should be able to provide testimony on the state’s comprehensive energy policy. We are
46 concerned with this language change which changes it to invited people who are interested. We
47 believe that having the public input by invitation makes this bill not contain a true public hearing
48 process which is problematic.

49 Another concern can be found on page 6, lines 27-29, where it gives the power to commission to
50 “Accept loan repayments, donations, grants, contributions, or gifts from any public or private
51 source to carry out the purposes of this chapter, which must be deposited in the clean sustainable
52 energy fund.” We find the language of “gifts from public or private sources” to be concerning.
53 Can this commission just accept money from any entity? Is that ethical? Can the commission
54 accept gifts from out-of-state interest groups? Will the records of these gifts be publicly
55 available? Again, to our former point on transparency, what is this money going to be used for?
56 Where are the assurances that this money will indeed go towards “affordable, reliable, and
57 sustainable energy for the benefit of the state's economy and communities” as stated in the bill.
58 We have found that what is considered affordable, reliable, and sustainable varies based on who
59 you talk to, how is the state legislature going to ensure that these decisions are made objectively
60 based on facts? We believe in moving North Dakota towards a clean and sustainable future in
61 energy, but HB 1452 misses the mark in several ways. Carbon capture technologies, the likely
62 recipient of a large portion of this funding, have been tried around the world and failed both
63 technically and economically.¹ Instead of funding expensive, high-risk projects and bailing out a
64 dying industry with tax dollars, we should be investing in economic diversification, transition
65 planning, community development, and retraining programs for people working in the coal
66 industry and for communities who are reliant on coal today.

67 I urge the committee to oppose HB 1452 or amend it to have more appropriate representation,
68 detailed requirements for funding, increased transparency, and clarification on gifts for the clean
69 sustainable energy authority created in HB 1452.

70

¹ <http://www.worc.org/carbon-capture-sequestration-report/>

HB 1452 Testimony

Submitted by Sonja Kaye

March 19, 2021

I live in South Fargo and get my electricity from **Cass County Electric Cooperative**. Because I get my electricity from a cooperative, I am a member-owner of the cooperative. Being a member-owner means that I do well when the cooperative does well. Conversely, when the cooperative does poorly I do poorly. I am a stakeholder in the economic operation of my cooperative.

Cass County Electric Cooperative is supplied by wholesale cooperative **Minnkota Power** and is considered a member owner of Minnkota, along with 10 other distribution cooperatives. Seventy-five percent of my electric bill is dependent on the cost of Minnkota's electricity production.

I oppose House Bill 1452, because this bill is clearly designed to support carbon capture technology, which is technology that is proven to fail, and in supporting the technology, the bill circumvents market mechanisms that make electricity cheaper. Project Tundra is not going to help Minnkota do better economically, and it will not put the cooperative in a stronger position moving into the future. Instead, I believe it will prevent the cooperative from planning for a future that is more secure. The CEO of Minnkota, Mac McLennan, indicates in a recent video that he is worried about the risk surrounding Project Tundra.

In the video, Mr. McLennan states:

"... If we don't find solutions and we continue to have a set of conditions that we are living through today, you are going to just continue to find 5 years from now... more (coal) plants in ND under pressure from an operating perspective and whether it's even defensible to continue to operate."¹

He stated that in 5 years or less, the coal plants will not even be defensible to operate. Think about what this means. Coal plants in North Dakota are currently marginally economic to operate. What happens when you add expensive, complex and unproven pollution control technologies, such as Project Tundra, to a coal plant? Clearly, the operating and maintenance costs will go way up, not down, making coal plants even less defensible to operate. There is no possible advancement in carbon reduction technology that will ever lower the cost of electricity. It will always be an added pollution control expense.

When asked about the importance of making Project Tundra work, Mac goes on to say:

"... it's not necessarily... because WE want to see our project go forward. It's really because people need to fundamentally understand that it is a component to having lignite-based generation continue to operate in a carbon -managed... (world and where there is market competition from cheaper energy resources)"

1

https://www.youtube.com/watch?v=OYiMpxnRing&t=1999s&fbclid=IwAR3OwQsejlt8rj76vx2k03wmdnBb_wL1V8yMvDo5T5dKYrVsCML1Pz6OZ4c

Let me repeat that. The CEO of Minnkota states. “it’s not necessarily because WE want to see our project go forward...” It appears that private industry is more important than consumers.

Why would you want to invest \$40 million (give or take a couple of billion) of ND money to make my cooperative even more vulnerable to energy economic trends that are pushing coal out of the market?

The likelihood of failure of this project is high, especially considering the failure of a similar project in Texas, Petra Nova. If Tundra fails, the 45Q tax credits will not be there to offset the cost of operation. Even if you assume the Project works, the 45Q tax credits, which are worth over \$25 million every year it operates, expire after 12 years. What then? This bill threatens all 140,000 Minnkota electricity users...and the US taxpayers who would be subsidizing the electricity of the 140,000 people dependent on Minnkota.

To put it another way, we know the tax credits will end after twelve years; but they could expire sooner if the operation fails to perform as hoped. This is not sustainable. Money is better spent on projects we KNOW will provide benefit for many decades into the future, not just a few years.

Coal has been an amazing resource over the past 50 years, but the reality of the situation is that coal will play a small role, if any, in our long-term electricity future. An article which I note below quotes an independent think- tank that argued last year that:

“... SWB (solar, wind and battery) costs would fall a further 70% over the next 10 years...”²

Minnkota and the Lignite Industry are over-estimating the value of coal with carbon-capture technology. Solar, wind and battery technology, among others, will supersede demand for expensive coal technology.

It is time for the Lignite Industry to plan their exit strategy from the electricity market, not increase costs for consumers.

“Continued over-investment in an asset class beyond what the fundamental value can possibly return is the very definition of a financial bubble,” the report says.³

Our overcommitment to coal is creating a bubble in the North Dakota energy market. Project Tundra will amplify this bubble. Where are we going to be when the bubble bursts?

² <https://reneweconomy.com.au/over-valued-fossil-fuel-assets-creating-trillion-dollar-bubble-about-to-burst/>

³ <https://reneweconomy.com.au/over-valued-fossil-fuel-assets-creating-trillion-dollar-bubble-about-to-burst/>

Many of you attended the joint hearing the afternoon of March 11 to learn how North Dakota utilities and system operators fared during the February weather event. The presenters told us the biggest deficits in capacity in our region came from coal and natural gas plants. Four gas plants and four coal plants operated either sub-optimally or not at all. Another coal plant was available but was not dispatched due to its cost. Reasons for the derated plants included electrical issues, frozen pipes, and coal ash build up. Of most concern to me, however, was the reason for the derates at MDU's Lewis and Clark coal and natural gas plants: low river levels.

Access to water is vital to the operation of conventional power plants like coal and gas. The average 500 MW coal plant uses 300 million gallons of water per day.⁴ As droughts become more common due to climate change, our grid will be increasingly vulnerable to new weather patterns if we are overly dependent on conventional power plants. As droughts become more common, coal will become less reliable and feasible, as illustrated by MDU's situation. Even more concerning, adding carbon capture equipment significantly **increases** the amount of water needed. I do not think we want to make ourselves more vulnerable by relying too much on thermal generated power. Coal is not the reliability savior that we want to believe it is, and it is certainly not the low-cost option that is being advertised. See the article I have provided in this testimony for further details.⁵ I quote from the article:

*"Coal and gas power plants with integrated carbon capture and storage (CCS) are doubly mispriced (overvalued). **Governments** (like yourselves in this committee) must protect **people**, not incumbent companies or **industries**, from the **financial risk of the conventional energy asset bubble**"⁶*

By funding projects like Tundra, we are holding electricity consumers hostage with the continued threat of overinvestment in coal assets, rather than providing low-cost electricity, to which end the electricity market was created. MISO has a market process called unit commitment which strives to use the lowest cost generation that is available first. Because Minnkota is obligated to supply the amount of electricity its customers' demand and Minnkota's capacity portfolio is heavily dependent on the operation of its coal plants to provide adequate supply, MISO has no choice but to allow Minnkota to run their coal plants, regardless of being a higher-cost source of electricity.

Brian Tulloh, MISO Executive Director of External Affairs, says this about cold-weather events **"Neighbors** are very important at a time like this!" and "From a grid standpoint, you never want to be an island electrically and unable to access help from your neighbors."

⁴ Water is used for cooling, processing/ cleaning and steam. Information is on the Department of Energy website.

⁵ <https://reneweconomy.com.au/over-valued-fossil-fuel-assets-creating-trillion-dollar-bubble-about-to-burst/>

⁶ Rethinking Energy; Page 7;

<https://static1.squarespace.com/static/585c3439be65942f022bbf9b/t/604a545fe0dbf3775ee6329b/1615484151178/Rethinking-Energy-LCOE.pdf>

This bill intends to take Minnkota's already small island of electricity generation and making it even smaller.

Reliance on coal-fired power puts Minnkota in a very dis-advantageous position in terms of responding quickly to a grid that is increasingly dynamic. In order to maximize cheap renewable energy, Minnkota needs to have an energy resource capable of responding quickly (within minutes) to the fluctuations in low-cost renewable energy output. Without this flexibility they are doing a disservice to their customers and putting up roadblocks for all their customers wanting to install solar panels on their properties.

Minnkota states that they use a demand response program for flexibility, a demand response program that they have used for decades and is, arguably, out of date. Part of the program requires industrial customers to burn expensive diesel fuel to provide adequate peak power, diesel fuel which, which emits large quantities of CO₂. These days I would expect this type of demand response program mainly to be used in emergency situations, not as flexibility in responding to renewable energy.

I, also, want to add that there are big differences between the "low-emission" technology like Project Tundra and actual green technology, like solar and wind. Solar and wind and other renewables are low-cost and are truly low emission. **Coal** is never low emission. You cannot get away from basic chemistry. Burning coal produces CO₂, even with the expense of Project Tundra. The capture technology does not stop the emission; it just relocates the CO₂.

Project Tundra poses environmental and health hazards; CO₂ is also a toxic substance when in high concentrations. If the CO₂ is pumped underground, who will be monitoring this toxic substance for leaks? What is the plan when it does leak? Who is financially liable if a leak harms a person or asphyxiates an entire town in coal country? In addition to being low- cost and potentially zero-emission, renewables are better options because they are both sustainable and innocuous to the environment. The hazards that coal pose, on the other hand, are expensive. Clean up costs from coal ash alone are in the billions.

These are difficult matters to bear in mind and decisions will never be clear if the people making them have a financial interest in maintaining the status quo. **We need an independent, knowledgeable and non-discriminatory body making energy decisions.**

The unfortunate truth is: Coal fired power plants are not going to be saved by **short-term** projects like Project Tundra. Minnkota and its members, like myself, will not be helped by Project Tundra or increased funding for similar projects. Project Tundra is just a short-term measure to attempt to appeal to a carbon-constrained world. **There is no viable long-term business plan here.**

The Lignite Industry and associated communities DO need your help. Minnkota needs your help, but do not support expensive short-term projects that provide no economic benefit to consumers. Support projects which have a future, such as energy storage, smart grid investments, national transmission planning, or large- scale renewable projects that benefit ND citizens. A great example of how energy projects can help citizens would be the recent successful project in Batesville, Arkansas where a solar installation on school property helped the school district save \$600,000, enough to give all the teachers in the district up to a \$15,000 raise.⁷ Does Project Tundra promise a raise to our hard-working teachers?

⁷ <https://news.yahoo.com/schools-solar-panel-savings-every-125507252.html>

No. Support projects that benefit ND electricity users. Do not hurt the 140,000 members dependent on Minnkota electricity by encouraging my cooperative to continue operating assets that are increasingly **not defensible and never will be defensible in the future**. Stop the indiscriminate investment in coal-fired electricity.

Please, vote no on HB 1452. Thank you.

Reliability of resources is compensated by the ISO markets: Below a snapshot taken from the MISO website that illustrate MISO’s market mechanism for rewarding reliability characteristics in generation resources. Utilities may offer any of their resources into this market if they meet certain criteria. This market is called the ancillary market. It is separate from the buying and selling of electricity.

Ancillary Market MCP 📄 ⏴ ⏵ 🔄

17-Mar-2021 - Interval 09:40 EST [View Map](#)

Day-Ahead Market Zone	Generation Regulation	Generation Spinning Reserve	Generation Supplemental Reserve	Demand Supplemental Reserve
1	10.45	3.39	0.45	0.45
2	10.45	3.39	0.45	0.45
3	10.45	3.39	0.45	0.45
4	10.45	3.39	0.45	0.45
5	10.45	3.39	0.45	0.45
6	10.45	3.39	0.45	0.45
7	10.45	3.39	0.45	0.45
8	10.45	3.39	0.45	0.45

17-Mar-2021 - Interval 09:40 EST

Real-Time Market Zone	Generation Regulation	Generation Spinning Reserve	Generation Supp Reserve	Demand Supp Reserve	Regulation Mileage MCP
1	8.68	2.90	0.18	0.18	0.31
2	8.68	2.90	0.18	0.18	0.31
3	8.68	2.90	0.18	0.18	0.31
4	8.68	2.90	0.18	0.18	0.31
5	8.68	2.90	0.18	0.18	0.31
6	8.68	2.90	0.18	0.18	0.31
7	8.68	2.90	0.18	0.18	0.31

Ramp MCP 📄 ⏴ ⏵ 🔄

17-Mar-2021 - Interval 09:40 EST [View Map](#)

Day-Ahead Market Zone	Ramp Capability Up MCP	Ramp Capability Down MCP
1	0.00	0.00
2	0.00	0.00
3	0.00	0.00
4	0.00	0.00
5	0.00	0.00
6	0.00	0.00
7	0.00	0.00
8	0.00	0.00

17-Mar-2021 - Interval 09:40 EST

Real-Time Market Zone	Ramp Capability Up MCP	Ramp Capability Down MCP
1	0.00	0.00
2	0.00	0.00
3	0.00	0.00
4	0.00	0.00
5	0.00	0.00
6	0.00	0.00
7	0.00	0.00
8	0.00	0.00

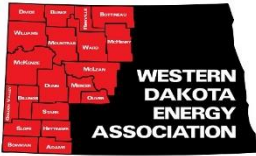
Information related to failed carbon capture facility, Petra Nova: https://earth.gizmodo.com/the-only-carbon-capture-plant-in-the-u-s-just-closed-1846177778?fbclid=IwAR1Ot_Zjyh2Pl1ZrwSr2saxX6C34-pffLhuGqNxFeP8NMn8bbq4wvaFy29M

My name James Leiman and I am the Commissioner of Commerce for the State of North Dakota.

I am here today to testify in support of House Bill 1452. At the Dept. of Commerce we recognize ESG and know that it is a cornerstone for both energy and ag to successfully move forward in the coming years. Our job is to do everything we can to increase the overall wealth of the state. Capital markets are telling us that ESG compliant investments will drive the future, so our role is to position the state to best access this necessary capital. Markets have gone a step further with the announcement from Blackrock that not only will their investments require ESG compliance, but they will actually begin divesting from non ESG compliant opportunities. We cannot afford this and must take this issue head on.

This move is significant and influential for others to follow. With a state like ND that is heavily reliant on oil and soil for the strength of our economy, we need to be proactive rather than reactive in this space in order to remain competitive. This Bill allows us to do that through a data, research, and industry driven approach. I encourage you to support this Bill as it is paramount to the success of our energy industry in the future.

I now stand for any questions you may have. Thank you.



WESTERN DAKOTA ENERGY ASSOCIATION

EXECUTIVE COMMITTEE

March 19, 2021

Shannon Holter
President
City of Bowbells

Testimony of:
Geoff Simon, Lobbyist #144
in support of HB 1452
Senate Energy and Natural Resources Committee

Trudy Ruland
Vice President
Mountrail County

Chairman Kreun and Committee members:

Supt. Leslie Bieber
Alexander PSD

On behalf of the city, county and school district members of the Western Dakota Energy Association (WDEA), we wish to express strong support for House Bill 1452 to establish a clean sustainable energy authority and a clean sustainable energy fund. Our association represents North Dakota civic leaders and citizens who live in the oil, gas and coal-producing counties. The livelihood of many of these communities depend on the success of the energy industry, and they in turn provide vital services that support energy development.

Daryl Dukart
Dunn County

Zach Gaaskjolen
City of Stanley

Supt. Shon Hocker
Dickinson PSD

Our association board of directors includes county commissioners, mayors, council members and school superintendents from communities throughout western North Dakota. The legislation before you is about the future of North Dakota's fossil fuel industry, and our member communities will live in that future. The future could be bleak if the anti-fossil fuel agenda of the Biden administration prevails, or it could be very bright if we are able to embrace new technologies to ensure the continued economic viability and sustainability of the oil, gas and coal industries.

Supt. Tim Holte
Stanley PSD

Lyn James
City of Bowman

David Montgomery
Williams County

Some might ask why WDEA should have a member on the authority that would be created by HB 1452. It's because our members live in energy-producing counties, so have a powerful incentive to see the industry succeed. Our members have expertise and experience in fostering energy research and development. Two former WDEA presidents currently serve on the Oil & Gas Research Council, and another of our board members serves on the Lignite Research Council.

John Phillips
Coal Conversion
Counties

Supt. Brad Rinas
Washburn PSD
Coal Conversion
Counties

WDEA wishes to thank Representative Bosch for sponsoring this important legislation, and urges the committee's strong support of HB 1452.

Thank you for the opportunity to submit testimony.



March 19, 2021

Chairman Kreun and Senate Energy and Natural Resources Committee Members,

On behalf of the members of the Lignite Energy Council, I am submitting testimony today in support of House Bill 1452 which would create the Clean Sustainable Energy Authority and the Clean Sustainable Energy Fund.

The framework of HB1452 would build upon the success of the Lignite Research Council (LRC) to create a “super council” that would boost all sectors of North Dakota’s energy industry by providing substantial opportunities for research and development combined with the flexibility necessary to be able to best receive and utilize private and public investment within our state.

The LRC has been supporting substantial research and development investments in carbon capture projects, which could spur a new market for carbon dioxide, and rare earth minerals found in lignite. Both areas could have global significance if our projects are proven successful. Soon, there may be carbon capture projects that could utilize additional funding in the commercialization stage where a project is putting together a financial package in order to be built and begin operations.

Our experience has shown how a proposal like HB1452 will greatly help bold clean energy projects achieve the proper vetting, funding, and support from the private and public sectors to find the way forward to become a reality and provide significant returns for our state.

For these reasons, the Lignite Energy Council supports HB1452 and we respectfully ask that the committee provide this legislation with a favorable “Do-Pass” recommendation.

Thank you for your consideration,

Jason Bohrer
President and CEO
Lignite Energy Council



Sixty-seventh
Legislative Assembly
of North Dakota

REENGROSSED HOUSE BILL NO. 1452

Introduced by

Representatives Bosch, Delzer, Mitskog, Pollert, Porter

Senators Holmberg, Patten, Bell, Wardner

1 A BILL for an Act to create and enact a new chapter to title 54 of the North Dakota Century
2 Code, relating to a clean sustainable energy authority and a clean sustainable energy fund; to
3 amend and reenact sections 17-01-01 and 17-07-01 and subsection 5 of section 54-44.4-02 of
4 the North Dakota Century Code, relating to low-emission technology, the energy policy
5 commission, and an exemption from procurement services for energy programs; to provide a
6 continuing appropriation; to provide an appropriation; to provide a transfer; and to provide a
7 report.

8 **BE IT ENACTED BY THE LEGISLATIVE ASSEMBLY OF NORTH DAKOTA:**

9 **SECTION 1. AMENDMENT.** Section 17-01-01 of the North Dakota Century Code is
10 amended and reenacted as follows:

11 **17-01-01. ~~25x'25 initiative~~ Low-emission technology.**

12 The legislative assembly adopts the ~~25x'25~~ low-emission technology initiative with the goal
13 that ~~not later than January 1, 2025,~~ the agricultural, forestry, natural resources, and working
14 land of the United States should provide energy from ~~renewable resources~~ low-emission
15 technology ~~not less than twenty-five percent of the total energy consumed in the United States~~
16 and continue to produce safe, abundant, and affordable food, fuel, feed, and fiber. Increasing
17 America's ~~renewable energy~~ low-emission technology use will bring new
18 ~~technologies~~ advancements to market and save consumers money, reduce the nation's
19 dependence on oil from the Middle East, create good new jobs in rural America, and clean up
20 the air and, reduce urban smog, and address global warming issues. As used in this initiative,
21 ~~renewable energy~~ low-emission technology includes biofuels, solar, wind, hydropower,
22 geothermal, carbon recycling, carbon sequestration, use of waste heat, recycling, ~~low-emission~~
23 ~~technologies that create or use hydrogen,~~ coal, oil, natural gas, and energy efficiency initiatives.
24 ~~The 25x'25 initiative will benefit agriculture and forestry, the environment, and national security~~

1 ~~and provide economic growth~~Investing and acknowledging a commitment to low-emission
2 ~~technologies~~technology allows the state to use its abundant natural resources for the benefit of
3 current and future generations. This initiative provides North Dakota consumers with affordable,
4 reliable, resilient, and sustainable energy for the benefit of the state's economy and
5 communities.

6 **SECTION 2. AMENDMENT.** Section 17-07-01 of the North Dakota Century Code is
7 amended and reenacted as follows:

8 **17-07-01. Energy policy commission.**

9 1. The energy policy commission is composed of:

- 10 a. The commissioner of commerce, or the commissioner's designee;
11 b. A representative of the agriculture community appointed by the governor;
12 c. A representative recommended by the lignite energy council appointed by the
13 governor;
14 d. A representative recommended by the North Dakota petroleum council appointed
15 by the governor;
16 e. A member from the biodiesel or green diesel industry appointed by the governor;
17 f. A member from the biomass industry appointed by the governor;
18 g. A member from the wind industry appointed by the governor;
19 h. A member from the ethanol industry appointed by the governor;
20 i. A representative recommended by the North Dakota petroleum marketers
21 association appointed by the governor;
22 j. A member from the North Dakota investor-owned electric utility industry
23 appointed by the governor;
24 k. A member from the generation and transmission electric cooperative industry
25 appointed by the governor;
26 l. A member from the lignite coal-producing industry appointed by the governor;
27 m. A member from the refining or gas-processing industry appointed by the
28 governor; and
29 n. Additional nonvoting members appointed by the governor.

- 1 2. Each member of the commission shall serve for a term of two years, beginning July
2 first, may be reappointed for additional terms, and serves at the pleasure of the
3 governor.
- 4 3. The commissioner of commerce, or the commissioner's designee, is chairman of the
5 commission.
- 6 4. The commission shall meet at least ~~four~~two times per biennium or as often as the
7 chairman deems necessary. The commission shall hold at least two public hearings
8 per biennium, ~~at which time interested parties may present to receive testimony in-~~
9 ~~coordination with the state energy research center and allow public input from invited-~~
10 ~~national and regional leaders and interested persons~~ regarding issues pertinent to the
11 state's comprehensive energy policy and low-emission technology initiative. The
12 department of commerce shall provide staffing for the commission.
- 13 5. ~~The legislative assembly shall develop a comprehensive energy policy for the state.-~~
14 ~~The commission shall monitor progress made toward the goals outlined in the energy-~~
15 ~~policy and make recommendations to the energy policy as needed~~~~In coordination with-~~
16 ~~the state energy research center, the~~The commission shall~~may~~ identify and make
17 recommendations to the clean sustainable energy authority on technologies related to
18 low-emission technology and advancements in energy efficiencies for the state. The
19 recommendations must~~may~~ include consideration of ~~environmental benefits;~~
20 advancements or developments that have led to increased economic benefits and
21 positive environmental public health benefits for the citizens and visitors of North
22 Dakota, including cleaner air, soil, and water; improved efficiencies; reduction of
23 waste; lower carbon-intensive agricultural products or processes; and units~~quantities~~
24 of energy used. The recommendations also may consider other factors, including
25 environmental, social, and governance policies and the effect on financial or capital
26 markets. The commission shall consider and make recommendations on policies to
27 ensure the availability of affordable, reliable, resilient, and sustainable energy in the
28 state; to expand value-added energy; and to expand the opportunities to diversify the
29 use of North Dakota's natural resources, which may increase state tax revenues. The
30 commission shall study and evaluate critical energy infrastructure and shall make
31 recommendations to ensure the state's comprehensive energy policy supports

1 electrical grid reliability and resiliency and supports sufficient dispatchable generation
2 capacity to avoid brownouts, blackouts, or outages. The commission shall monitor the
3 progress of implementing and achieving environmental benefits through the state's
4 comprehensive energy policy.

5 6. The legislative assembly shall consider recommendations from the commission to
6 develop a comprehensive energy policy for the state. The commission shall report its
7 recommendations biennially to the legislative management.

8 ~~6.7.~~ The members of the commission who are not state employees are entitled to mileage
9 and expenses as provided by law for state officers and employees. Unless otherwise
10 provided in this subsection, the expenses of appointed members are to be paid by the
11 department of commerce. A state employee who is a member of the commission must
12 receive that employee's regular salary and is entitled to mileage and expenses, to be
13 paid by the employing agency.

14 **SECTION 3.** A new chapter to title 54 of the North Dakota Century Code is created and
15 enacted as follows:

16 **Definitions.**

17 As used in this chapter:

- 18 1. "Authority" means the clean sustainable energy authority.
- 19 2. "Clean" means a technology or concept that reduces emissions to the air, water, or
20 land and meets or exceeds state and federal environmental regulations.
- 21 3. "Commission" means the industrial commission.
- 22 4. "Fund" means the clean sustainable energy fund.
- 23 5. "Program" means the clean sustainable energy program.
- 24 6. "Sustainable" means a technology or concept that allows the use of a natural resource
25 to be maintained or enhanced through increased efficiency and life cycle benefits
26 without while either increasing or not adversely impacting energy security, affordability,
27 reliability, resilience, or national security.

28 **Clean sustainable energy authority - Purpose.**

29 There is created the clean sustainable energy authority to support research, development,
30 and technological advancements through partnerships and financial support for the large scale
31 development and commercialization of projects, processes, activities, and technologies that

1 reduce environmental impacts and increase sustainability of energy production and delivery.

2 The purpose of the financial support is to enhance the production of clean sustainable energy,
3 to make the state a world leader in the production of clean sustainable energy, and to diversify
4 and grow the state's economy.

5 **Clean sustainable energy authority - Membership - Meetings.**

6 1. The clean sustainable energy authority consists of sixteen members, including eight
7 voting members and eight ~~ex officio~~, nonvoting ~~member~~ technical advisors.

8 2. The eight voting members consist of:

9 a. One member appointed by the legislative management to serve as chairman;

10 b. Two members appointed by the lignite research council;

11 c. Two members appointed by the oil and gas research council;

12 d. Two members appointed by the renewable energy council; and

13 e. One member appointed by the western Dakota energy association.

14 3. The eight ~~ex officio~~, nonvoting ~~member~~ technical advisors consist of:

15 a. One member appointed by the North Dakota outdoor heritage fund advisory
16 board;

17 b. The commissioner of commerce or the commissioner's designee;

18 c. The director of the department of environmental quality or the director's designee;

19 d. The director of mineral resources or the director's designee;

20 e. The director of the North Dakota pipeline authority or the director's designee;

21 f. The director of the North Dakota transmission authority or the director's designee;

22 g. The director of the state energy research center or the director's designee;

23 h. The president of the Bank of North Dakota or the president's designee;

24 4. The term of office for the chairman is two years. The term of office for the other voting
25 members is four years, and the other voting members may not serve more than two
26 consecutive terms. The terms of office for the voting members commence on July first.
27 The initial terms for the voting members of the authority must be staggered following a
28 method determined by the authority.

29 5. The authority shall meet at least semiannually. The chairman shall call a meeting upon
30 written request from three voting members of the authority. Five voting members is a
31 quorum at any meeting.

1 6. The authority may not forward a recommendation to the commission unless the
2 recommendation fulfills the purposes of this chapter and is approved by a majority of
3 the voting members of the authority.

4 **Clean sustainable energy authority - Duties - Report.**

5 1. The authority shall make recommendations to the commission for program guidelines,
6 including eligibility criteria for entities to receive funding under this chapter.

7 2. The nonvoting technical advisors shall develop a process to review and evaluate
8 projects to determine the technical merits and feasibility of any application, including
9 potential benefits of the development of low-emission technology, the expansion of the
10 development of the state's natural resources or energy production, and the
11 contribution to the economic diversity in the state.

12 3. The authority shall make recommendations to the commission for grant awards, loan
13 approvals, or other financial assistance to provide funding to support research,
14 development, and technological advancements for the large scale development and
15 commercialization of projects, processes, activities, and technologies that reduce
16 environmental impacts and increase sustainability of energy production and delivery in
17 accordance with this chapter. Any projects, processes, activities, and technologies
18 selected by the commission for funding must have been recommended by the
19 authority, must demonstrate feasibility based on a technical review conducted by the
20 nonvoting technical advisors of the authority, must have other sources of financial
21 support, and must achieve the priorities and purposes of the program. At the request
22 of the authority, the Bank of North Dakota shall provide a recommendation regarding
23 the economic feasibility of a project, process, activity, or technology under
24 consideration by the authority. The Bank shall review the business plan, financial
25 statements, and other information necessary to provide a recommendation.

26 ~~3.4.~~ The authority may consult with any other state agency necessary to carry out the
27 purposes under this chapter.

28 ~~4.5.~~ Each biennium, the authority shall provide a written report to the legislative
29 management regarding its activities and the program's financial impact on state
30 revenues and the state's economy.

1 **Clean sustainable energy program - Powers and duties of the commission.**

- 2 1. The commission is granted all the powers necessary to carry out the purposes of this
3 chapter, including the power to:
- 4 a. Provide grants, loans, or other forms of financial assistance to qualified entities
5 for the research, demonstration, development, and commercialization of projects,
6 processes, activities, and technologies that reduce environmental impacts and
7 use energy sources derived from within the state. Other forms of financial
8 assistance include venture capital investments and interest rate buydowns. The
9 commission must require an entity to provide assurance of financial and other
10 types of support that demonstrate a commitment to the project, process, activity,
11 or technology.
 - 12 b. Enter into contracts or agreements to carry out the purposes of this chapter,
13 including contracting for the administration of the program.
 - 14 c. Keep accurate records of all financial transactions performed under this chapter.
 - 15 d. Cooperate with any private, local, state, or national organization to make
16 contracts and agreements for programs that advance the mission of the program.
 - 17 e. Accept loan repayments, donations, grants, contributions, or gifts from any public
18 or private source to carry out the purposes of this chapter, which must be
19 deposited in the clean sustainable energy fund.
 - 20 f. Make guidelines necessary to carry out the purposes of this chapter, including
21 guidelines relating to the ownership of intellectual property.
- 22 2. The commission may acquire, purchase, hold, use, lease, license, sell, transfer, or
23 dispose of any interest in an asset necessary for clean sustainable energy technology
24 development to facilitate the production, transportation, distribution, or delivery of
25 clean energy commodities produced in the state as a purchases of last resort.
- 26 3. The commission shall provide administrative support to the authority for the operation
27 of the program, including the preparation of forms, review of applications, and ongoing
28 review of any contracts. The commission may contract with a public or private entity to
29 provide technical assistance necessary to implement the purposes of this chapter.
- 30 4. The commission is not subject to the reporting requirements under chapter 54-60.1.

1 **Clean sustainable energy program - Access to records.**

2 1. To the extent the commission or authority determines the materials or data consist of
3 trade secrets or commercial, financial, or proprietary information of individuals or
4 entities applying to or contracting with the commission or receiving commission
5 services under this chapter, materials and data submitted to, made by, or received by
6 the commission or authority, are not public records subject to section 44-04-18 and
7 section 6 of article XI of the Constitution of North Dakota, and are subject to section
8 44-04-18.4.

9 2. A person or entity may file a request with the commission to have material designated
10 as confidential under subsection 1. The request must contain any information required
11 by the commission and must include at least the following:

12 a. A general description of the nature of the information sought to be protected.

13 b. An explanation of why the information derives independent economic value,
14 actual or potential, from not being generally known to other persons.

15 c. An explanation of why the information is not readily ascertainable by proper
16 means of other persons.

17 d. A general description of any person that may obtain economic value from
18 disclosure or use of the information, and how the person may obtain this value.

19 e. A description of the efforts used to maintain the secrecy of the information.

20 3. Any request under subsection 2 is confidential. The commission shall examine the
21 request and determine whether the information is relevant to the matter at hand and is
22 a trade secret under the definition in section 47-25.1-01 or 44-04-18.4. If the
23 commission determines the information is either not relevant or not a trade secret, the
24 commission shall notify the requester and the requester may ask for the return of the
25 information and the request within ten days of the notice. If no return is sought, the
26 information and request are public record.

27 4. The names or identities of independent technical reviewers on a project or program
28 are confidential, may not be disclosed by the commission, and are not public records
29 subject to section 44-04-18 or section 6 of article XI of the Constitution of North
30 Dakota.

1 **Clean sustainable energy fund - Continuing appropriation.**

2 There is created in the state treasury the clean sustainable energy fund. The fund consists
3 of all moneys transferred to the fund by the legislative assembly; interest upon moneys in the
4 fund; principal and interest payments to the fund; and donations, grants, and other contributions
5 received by the commission for deposit in the fund. All moneys in the fund are appropriated to
6 the commission on a continuing basis to provide grants, loans, and other financial assistance
7 and for administrative and operating costs of the authority and program pursuant to the
8 provisions under this chapter.

9 **SECTION 4. AMENDMENT.** Subsection 5 of section 54-44.4-02 of the North Dakota
10 Century Code is amended and reenacted as follows:

11 5. Procurements by the industrial commission for energy-related programs under
12 chapters 17-05, 54-17.5, 54-17.6, 54-17.7, section 3 of this Act, and 54-63 and under
13 those statutes in title 38 authorizing the industrial commission to perform well and hole
14 pluggings, reclamation work, equipment removal, leak prevention, and similar work.

15 **SECTION 5. APPROPRIATION - TRANSFER - CLEAN SUSTAINABLE ENERGY FUND.**

16 There is appropriated out of any moneys in the general fund in the state treasury, not otherwise
17 appropriated, the sum of \$40,000,000, which the office of management and budget shall
18 transfer to the clean sustainable energy fund, during the biennium beginning July 1, 2021, and
19 ending June 30, 2023.

2021 SENATE STANDING COMMITTEE MINUTES

Energy and Natural Resources Committee Peace Garden Room, State Capitol

HB 1452
3/25/2021

Relating to low-emission technology, the energy policy commission, and an exemption from procurement services for energy programs.

Hearing called to order, all senators are present: **Bell, Schaible Piepkorn, Roers, Patten, and Kreun.**

Discussion Topics:

- Cleaned sustainable energy loan guaranty program
- Funding of Clean sustainable energy projects

Senator Bell [9:52] moved a DO PASS HB 1452
Amendment 21.0904.05001
Senator Roers [9:54] seconded the motion

Senators	Vote
Senator Curt Kreun	Y
Senator Jim P. Roers	Y
Senator Dale Patten	Y
Senator Merrill Piepkorn	Y
Senator Donald Schaible	Y
Senator Jessica Unruh Bell	Y

The motion passes 6-0-0

Senator Bell [9:56] moved to further amend HB
1452 with Amendment 21.2094.05002
Senator Roers [9:56] seconded the motion

Senators	Vote
Senator Curt Kreun	Y
Senator Jim P. Roers	Y
Senator Dale Patten	Y
Senator Merrill Piepkorn	Y
Senator Donald Schaible	Y
Senator Jessica Unruh Bell	Y

The motion passes 6-0-0

Senator Bell [10:05] moved a DO PASS on Re-
engrossed HB 1452 as amended and re-referred
to appropriations.
Senator Roers [10:05] seconded the motion

Senators	Vote
Senator Curt Kreun	Y
Senator Jim P. Roers	Y
Senator Dale Patten	Y
Senator Merrill Piepkorn	N
Senator Donald Schaible	Y
Senator Jessica Unruh Bell	Y

The motion passes 5-1-0

Senator Patten [10:11] will carry

Hearing adjourned [10:13]

Sheila Froehlich, Committee Clerk

PROPOSED AMENDMENTS TO REENGROSSED HOUSE BILL NO. 1452

Page 1, line 14, after "provide" insert "energy"

Page 1, line 14, remove "not"

Page 1, line 15, remove "less than twenty-five percent of the total energy consumed in the United States"

Page 2, line 1, replace "technologies" with "technology"

Page 2, line 3, after the second underscored comma insert "resilient,"

Page 2, line 9, after "commerce" insert ", or the commissioner's designee"

Page 3, line 1, after "commerce" insert ", or the commissioner's designee,"

Page 3, line 2, remove the overstrike over "four"

Page 3, line 2, remove "two"

Page 3, line 4, after "present" insert "to receive"

Page 3, line 4, remove the overstrike over "testimony"

Page 3, line 4, remove "in coordination"

Page 3, remove line 5

Page 3, line 6, remove "regional leaders and interested persons"

Page 3, line 7, after "policy" insert "and low-emission technology initiative"

Page 3, line 9, overstrike "The legislative assembly shall develop a comprehensive energy policy for the state."

Page 3, line 11, remove "In coordination with"

Page 3, line 12, replace "the state energy research center, the" with "The"

Page 3, line 12, replace "shall" with "may"

Page 3, line 13, after "on" insert "technologies related to"

Page 3, line 14, remove "technology and"

Page 3, line 14, remove "in energy efficiencies for the state"

Page 3, line 15, replace "must" with "may"

Page 3, line 15, remove "environmental benefits:"

Page 3, line 19, after "products" insert "or processes"

Page 3, line 19, replace "units" with "quantities"

Page 3, line 19, after "energy" insert "used"

Page 3, line 21, after the underscored period insert "The commission shall consider and make recommendations on policies to ensure the availability of affordable, reliable, resilient, and sustainable energy in the state; to expand value-added energy; and to expand the opportunities to diversify the use of North Dakota's natural resources, which may increase state tax revenues. The commission shall study and evaluate critical energy infrastructure and shall make recommendations to ensure the state's comprehensive energy policy supports electrical grid reliability and resiliency and supports sufficient dispatchable generation capacity to avoid brownouts, blackouts, or outages."

Page 3, line 23, after the period insert:

"6. The legislative assembly shall consider recommendations from the commission to develop a comprehensive energy policy for the state."

Page 3, line 23, after "report" insert "its recommendations"

Page 3, line 25, overstrike "6." and insert immediately thereafter "7."

Page 4, line 13, replace "without" with "while either increasing or not"

Page 4, line 19, after "impacts" insert "and increase sustainability"

Page 4, line 19, after "production" insert "and delivery"

Page 4, line 24, remove "ex officio."

Page 4, line 24, replace the second "members" with "technical advisors"

Page 4, line 31, remove "ex officio."

Page 4, line 31, replace "members" with "technical advisors"

Page 5, line 24, after "2." insert "The nonvoting technical advisors shall develop a process to review and evaluate projects to determine the technical merits and feasibility of any application, including potential benefits of the development of low-emission technology, the expansion of the development of the state's natural resources or energy production, and the contribution to the economic diversity in the state."

3."

Page 5, line 28, after "impacts" insert "and increase sustainability of energy production and delivery"

Page 5, line 31, after "review" insert "conducted by the nonvoting technical advisors of the authority"

Page 6, line 6, replace "3." with "4."

Page 6, line 8, replace "4." with "5."

Renumber accordingly

March 19, 2021

PROPOSED AMENDMENTS TO REENGROSSED HOUSE BILL NO. 1452

Page 6, line 6, after "3." insert "The authority may develop a loan program or a loan guarantee program under the clean sustainable energy fund. The Bank of North Dakota shall administer the loan program or loan guarantee program. The interest rate of a loan under this program may not exceed two percent per year. The maximum term of a loan under this section must be approved by the commission based on a recommendation from the authority. The Bank shall review applications for loans or loan guarantees and shall consider the business plan, financial statements, and other information necessary to evaluate the application. To be eligible for a loan or loan guarantee, an entity shall agree to provide the Bank of North Dakota with information as requested. The Bank of North Dakota may develop policies for loan participation with local financial institutions.

4."

Page 6, line 8, replace "4." with "5."

Page 6, line 21, after the underscored period insert "The commission may develop policies for the approval of loans or loan guarantees issued from the clean sustainable energy fund."

Page 8, line 9, after "**appropriation**" insert "**- Loans - Repayments**"

Page 8, after line 9 insert "1."

Page 8, after line 16, insert:

2. Any bond proceeds deposited in the fund must be used for loans or loan guarantees. The Bank of North Dakota shall deposit in the fund all principal and interest paid on the loans made from the fund. The bank may use a portion of the interest paid on the outstanding loans as a servicing fee to pay for administrative costs, not to exceed one-half of one percent of the amount of the interest payment. The Bank shall contract with a certified public accounting firm to audit the fund annually if the fund has any outstanding loans. The cost of the audit must be paid from the fund.

Re-number accordingly

CS
3/25
1047

PROPOSED AMENDMENTS TO REENGROSSED HOUSE BILL NO. 1452

Page 1, line 14, after "provide" insert "energy"

Page 1, line 14, overstrike "not"

Page 1, line 15, overstrike "less than twenty-five percent of the total energy consumed in the United States"

Page 2, line 1, replace "technologies" with "technology"

Page 2, line 3, after the second underscored comma insert "resilient,"

Page 2, line 9, after "commerce" insert ", or the commissioner's designee"

Page 3, line 1, after "commerce" insert ", or the commissioner's designee,"

Page 3, line 2, remove the overstrike over "~~four~~"

Page 3, line 2, remove "two"

Page 3, line 2, after "~~present~~" insert "to receive"

Page 3, line 4, remove the overstrike over "~~testimony~~"

Page 3, line 4, remove "in coordination"

Page 3, remove line 5

Page 3, line 6, remove "regional leaders and interested persons"

Page 3, line 7, after "policy" insert "and low-emission technology initiative"

Page 3, line 9, overstrike "The legislative assembly shall develop a comprehensive energy policy for the state."

Page 3, line 11, remove "In coordination with"

Page 3, line 12, replace "the state energy research center, the" with "The"

Page 3, line 12, replace "shall" with "may"

Page 3, line 13, after "on" insert "technologies related to"

Page 3, line 14, remove "technology and"

Page 3, line 14, remove "in energy efficiencies for the state"

Page 3, line 15, replace "must" with "may"

Page 3, line 15, remove "environmental benefits;"

Page 3, line 19, after "products" insert "or processes"

Page 3, line 19, replace "units" with "quantities"

Page 3, line 19, after "energy" insert "used"

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Page 3, line 21, after the underscored period insert "The commission shall consider and make recommendations on policies to ensure the availability of affordable, reliable, resilient, and sustainable energy in the state; to expand value-added energy; and to expand the opportunities to diversify the use of North Dakota's natural resources, which may increase state tax revenues. The commission shall study and evaluate critical energy infrastructure and shall make recommendations to ensure the state's comprehensive energy policy supports electrical grid reliability and resiliency and supports sufficient dispatchable generation capacity to avoid brownouts, blackouts, or outages."

Page 3, line 23, after the period insert: "6. The legislative assembly shall consider recommendations from the commission to develop a comprehensive energy policy for the state."

Page 3, line 23, after "report" insert "its recommendations"

Page 3, line 25, overstrike "6." and insert immediately thereafter "7."

Page 4, line 13, replace "without" with "while either increasing or not"

Page 4, line 19, after "impacts" insert "and increase sustainability"

Page 4, line 19, after "production" insert "and delivery"

Page 4, line 24, remove "ex officio."

Page 4, line 24, replace the second "members" with "technical advisors"

Page 4, line 31, remove "ex officio."

Page 4, line 31, replace "members" with "technical advisors"

Page 5, line 24, after "2." insert "The nonvoting technical advisors shall develop a process to review and evaluate projects to determine the technical merits and feasibility of any application, including potential benefits of the development of low-emission technology, the expansion of the development of the state's natural resources or energy production, and the contribution to the economic diversity in the state."

3. The authority may develop a loan program or a loan guarantee program under the clean sustainable energy fund. The Bank of North Dakota shall administer the loan program or loan guarantee program. The interest rate of a loan under this program may not exceed two percent per year. The maximum term of a loan under this section must be approved by the commission based on a recommendation from the authority. The Bank shall review applications for loans or loan guarantees and shall consider the business plan, financial statements, and other information necessary to evaluate the application. To be eligible for a loan or loan guarantee, an entity shall agree to provide the Bank of North Dakota with information as requested. The Bank of North Dakota may develop policies for loan participation with local financial institutions.

4."

Page 5, line 28, after "impacts" insert "and increase sustainability of energy production and delivery"

Page 5, line 31, after "review" insert "conducted by the nonvoting technical advisors of the authority"

2020

Page 6, line 6, replace "3." with "5."

Page 6, line 8, replace "4." with "6."

Page 6, line 21, after the underscored period insert "The commission may develop policies for the approval of loans or loan guarantees issued from the clean sustainable energy fund."

Page 8, line 9, after "**appropriation**" insert "**- Loans - Repayments**"

Page 8, after line 9 insert:

"1."

Page 8, after line 16, insert:

"2. Any bond proceeds deposited in the fund must be used for loans or loan guarantees. The Bank of North Dakota shall deposit in the fund all principal and interest paid on the loans made from the fund. The Bank may use a portion of the interest paid on the outstanding loans as a servicing fee to pay for administrative costs, not to exceed one-half of one percent of the amount of the interest payment. The Bank shall contract with a certified public accounting firm to audit the fund annually if the fund has any outstanding loans. The cost of the audit must be paid from the fund."

Renumber accordingly

REPORT OF STANDING COMMITTEE

HB 1452, as reengrossed: Energy and Natural Resources Committee (Sen. Kreun, Chairman) recommends **AMENDMENTS AS FOLLOWS** and when so amended, recommends **DO PASS** and **BE REREFERRED** to the **Appropriations Committee** (5 YEAS, 1 NAY, 0 ABSENT AND NOT VOTING). Reengrossed HB 1452 was placed on the Sixth order on the calendar.

Page 1, line 14, after "provide" insert "energy"

Page 1, line 14, overstrike "not"

Page 1, line 15, overstrike "less than twenty-five percent of the total energy consumed in the United States"

Page 2, line 1, replace "technologies" with "technology"

Page 2, line 3, after the second underscored comma insert "resilient."

Page 2, line 9, after "commerce" insert ", or the commissioner's designee"

Page 3, line 1, after "commerce" insert ", or the commissioner's designee."

Page 3, line 2, remove the overstrike over "four"

Page 3, line 2, remove "two"

Page 3, line 2, after "present" insert "to receive"

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Page 3, line 19, after "products" insert "or processes"

Page 3, line 19, replace "units" with "quantities"

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Page 3, line 21, after the underscored period insert "The commission shall consider and make recommendations on policies to ensure the availability of affordable, reliable, resilient, and sustainable energy in the state; to expand value-added energy; and to expand the opportunities to diversify the use of North Dakota's natural resources, which may increase state tax revenues. The commission shall study and evaluate critical energy infrastructure and shall make recommendations to ensure the state's comprehensive energy policy supports electrical grid reliability and resiliency and supports sufficient dispatchable generation capacity to avoid brownouts, blackouts, or outages."

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Page 3, line 25, overstrike "6." and insert immediately thereafter "7."

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Page 5, line 28, after "impacts" insert "and increase sustainability of energy production and delivery"

Page 5, line 31, after "review" insert "conducted by the nonvoting technical advisors of the authority"

Page 6, line 6, replace "3." with "5."

Page 6, line 8, replace "4." with "6."

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Page 8, after line 16, insert:

"2. Any bond proceeds deposited in the fund must be used for loans or loan guarantees. The Bank of North Dakota shall deposit in the fund all principal and interest paid on the loans made from the fund. The Bank may use a portion of the interest paid on the outstanding loans as a servicing fee to pay for administrative costs, not to exceed one-half of one percent of the amount of the interest payment. The Bank shall contract with a certified public accounting firm to audit the fund annually if the fund has any outstanding loans. The cost of the audit must be paid from the fund."

Renumber accordingly

2021 SENATE APPROPRIATIONS

HB 1452

2021 SENATE STANDING COMMITTEE MINUTES

Appropriations Committee
Roughrider Room, State Capitol

HB 1452
4/5/2021
Senate Appropriations Committee

Relating to a clean sustainable energy authority and a clean sustainable energy fund.

Senator Holmberg opened the hearing at 2:35 PM.

Senators present: **Holmberg, Krebsbach, Wanzek, Bekkedahl, Poolman, Erbele, Dever, Oehlke, Rust, Davison, Hogue, Sorvaag, Mathern, and Heckaman.**

Discussion Topics:

- Membership
- Status quo - oil & gas, solar & wind
- Project considerations

Representative Glenn Bosch, District 30, Bill sponsor – introduced bill and submitted testimony #11371

James Leiman, Commissioner, Dept of Commerce – testified in favor.

Jason Bohrer – President, Lignite Energy Council – testified in favor and submitted testimony #11359.

Ron Ness, President, ND Petroleum Council – testified in favor.

Dustin Gawrylow, ND Watchdog, testified in opposition and submitted #11333.

Sonja Kaye, Minnkota Power user – testified in opposition and submitted #11350.

Jacob Glower, Minnkota Power User – testified in opposition and submitted #11352.

Ryan Warner, Custodian, Synthesis Earth – testified in opposition and submitted #11348.

Andrew Alexis Varvel – Bismarck – testified in opposition.

Janessa Thompson, Dakota Resource Council – testified in opposition - #11323.

Additional written testimony: #11334, #11378.

Senator Holmberg closed the hearing at 3:27 PM.

Rose Laning, Committee Clerk

Chairman Holmberg and members of the Appropriation Committee, for the record I'm Glenn Bosch and I represent Bismarck's District 30.

I'm here today to introduce House Bill 1452.

HB-1452 establishes a Clean Sustainable Energy Authority for the purpose of supporting research and implementation of 21st century technologies and to advance low emissions, minimal footprint energy production in ND.

HB1452 develops a framework for the state acting in partnership with private industry to bring new and emerging technologies into commercial use while also updating the state's energy priorities, goals, and initiatives.

Before walking through of the bill, I'd like to draw your attention to the definition section of the bill on page 4, as two words (clean and sustainable) may be the most important part of what we are considering today, as they frame the challenges and opportunities that are in front of our states energy industry. Clean as defined is the reality that marketplace, other states, and the federal government want and in some cases are requiring reduced emission energy. Today, our energy producers recognize that for their long-term viability, they need to produce what the markets are asking for.

Reading the definition of sustainable you'll see words like, energy and national security, affordability, reliability, and resilience. If we spoke to people of Texas who spent last month without heat, with frozen water pipes, standing in line to fill a water jug or propane tank, I'm confident that they'd take all the sustainable energy we could produce. These events make it clear, that as policy makers we must support developing technologies that ensure this scenario doesn't happen in ND.

As we walk through the bill, please note that as amendments have been added, sections have moved, and for clarity, I'm going to address the sections out of sequence.

So, starting with Section 3 the bill, we create the Authority which is modeled after existing authorities under the ND Industrial Commission and establishes its membership from representatives of oil, gas, lignite, and renewal energy. It also establishes that nonvoting technical advisors would evaluate proposed projects to determine the technical merits and feasibility of any application, including

potential benefits of the development of the technology, and the contribution it makes to the economic diversity of the state.

Section 2 focuses on the Empower Commission and directs the Commission to be a resource available to the clean sustainable energy authority and for Empower to make recommendations on low-emission technology advancements in the state. These recommendations must include both environmental and economic benefits to the citizens of North Dakota. The recommendations also may consider other factors, including how environmental, social, and governance policies effect both financial and capital markets.

Section 1 of the bill amends what currently is known 25x25 initiative. Ten years ago, the 25x25 initiative was established with the goal that by no later than 2025, 25% of all the energy produced in the United States would come from renewable energy sources. Today that goal is achieved. The new language focuses the state of ND on the advancements of low emission technology and defines that low emission can be any energy source that benefits from energy efficiency initiatives and also benefits the state's economy and communities, including biofuels, wind, solar, coal, oil, natural gas, hydrogen, and carbon sequestration.

Section 5 of the bill provides for a \$40M transfer from the General Fund to newly established Clean Sustainable Energy Fund and directs the authorities board to make recommendations to the Industrial Commission for grants, loans, or other financial assistance that supports the commercialization of large-scale projects and processes that enhance the advancement of low-emission sustainable technologies. It also requires the authority to report to legislative management the financial impact on state revenues and economy.

Lastly, in the Senate Energy and Natural Resources committee language was added that bond proceeds deposit into the fund must be used for loans and loan guarantees.

With that, Chairman and committee members I hope you will give this important legislation your favorable consideration and I'll stand for questions.



April 5, 2021

Chairman Holmberg and Senate Appropriations Committee Members,

On behalf of the members of the Lignite Energy Council, I am submitting testimony today in support of House Bill 1452 which would create the Clean Sustainable Energy Authority and the Clean Sustainable Energy Fund.

The framework of HB1452 would build upon the success of the Lignite Research Council (LRC) to create a “super council” that would boost all sectors of North Dakota’s energy industry by providing substantial opportunities for research and development combined with the flexibility necessary to be able to best receive and utilize private and public investment within our state.

The LRC has been supporting substantial research and development investments in carbon capture projects, which could spur a new market for carbon dioxide, and rare earth minerals found in lignite. Both areas could have global significance if our projects are proven successful. Soon, there may be carbon capture projects that could utilize additional funding in the commercialization stage where a project is putting together a financial package in order to be built and begin operations.

Our experience has shown how a proposal like HB1452 will greatly help bold clean energy projects achieve the proper vetting, funding, and support from the private and public sectors to find the way forward to become a reality and provide significant returns for our state.

For these reasons, the Lignite Energy Council supports HB1452 and we respectfully ask that the committee provide this legislation with a favorable “Do-Pass” recommendation.

Thank you for your consideration,

Jason Bohrer
President and CEO
Lignite Energy Council



HB 1452 – Testimony by Dustin Gawrylow (Lobbyist #266) North Dakota Watchdog Network

The Clean Sustainable Energy Fund is an open-ended expansion of government.

Based on the makeup of the voting committee, the deck is clearly stacked for using the money and the government program to bailout, subsidize, and prop-up traditional energy. And since we have multiple bills this session to help the coal industry, one can only assume it is to help that industry. At least for a little while.

It is also becoming apparent that the goal of the fund is to use state tax dollars to create a government program that will subsidize speculative technology with the goal of making fossil fuel based energy more marketable to states that have decided they don't want such power sources.

It should also be noted that even though the fiscal note on this bill does not say so, there is a \$40m/biennium continuing appropriation to this Clean Sustainable Energy Fund hiding in the Legacy Earnings Stream bill (HB 1380), as well as the proposed \$250 million grant funded by bonded debt in HB 1431

The Legacy Earnings portion of HB 1380 should either be triggered by the passage of HB 1452, or the Legacy Fund earnings provisions from HB 1380 should be placed into HB 1452 so that it is clear that HB 1452's fiscal note is not a one-time expense and that this will be an on-going subsidy and government program.

The legislature should say no to growing government, say no to subsidizing one particular industry, and say no protectionist policies that will only buy certain industries a few more year in an export market that no longer wants coal based power.

By eliminating broad based tax burdens, for all industries not just select industries, we can move North Dakota forward and expand the economy as a whole.

I urge a DO NOT PASS on HB 1452, and the portions of HB 1431 and 1380 associated with it.

Chairman and Members of the Committee,

My name is Sonja Kaye. I get my electricity from Minnkota Power Cooperative. Minnkota is a sponsor of Project Tundra, a project that depends heavily on the passage of House Bill 1452. I believe this bill was created specifically for the implementation of Project Tundra.

Seventy-five percent of my electric bill depends on the production cost of Minnkota's electricity. My interest and Minnkota's mission are to keep the production cost of their electricity as low as possible. Project Tundra does **not** align with this mission.

What **are** some of the goals of Project Tundra?

Is the goal of Project Tundra to make electricity more affordable? No. Clearly spending a couple billion dollars to build this complex capture facility and another \$25 million annually to run it, does not make electricity cheaper.

Is the goal to reduce CO2? It does not; it just relocates it. Burning coal creates CO2, period.

Have we considered other cheaper options? No. To reduce our CO2 by 85%, we could choose to run the coal plants two months out of the year, instead of twelve. This option disappears, however, with the addition of Project Tundra. Coal plants must run at a certain level to be economically viable, and the tax credits on which Project Tundra relies require the capture of a minimum of 500,000 tons of CO2 per year. By adding Tundra, you are forcing yourself into a must-run situation to (maybe) make the project work a few years.

Does Project Tundra make electricity more reliable? No. During our February cold-weather event it was coal and natural gas that were the biggest threats to electricity. Anywhere from frozen pipes to electrical issues and even low river levels. The average 500 MW coal plant uses 300 billion gallons of water a day. Project Tundra will add billions of gallons more to the water requirement. **How do we justify this water usage in these years of drought?**

Did you know California reaches over 60- 70% penetration of renewables almost every day with reliable electricity? They get less than 1% of their power from coal plants. And did you know, on a per capita basis, California has less power outages than North Dakota does?

Is the goal of Project Tundra to add more capacity to the grid? It does not. It **uses** large amounts of electricity. In fact, it consumes so much electricity, Minnkota is thinking of adding a natural gas facility to operate the capture equipment. Tundra is merely pollution control. (sort of, because it is not clear how long and safely the CO2 can be contained or if it will affect ground water)

Is the goal to make coal more competitive? It does not. It artificially allows the industry to continue operating for a few years, peripherally to the market. It might extend the life of a coal plant for 15 years, but we don't even know that for sure.

What happens when the tax credits expire? Will North Dakota pay the \$25 million annually to relocate the CO2?

Will Enhanced Oil Recovery finance the CO2 capture? Doubtful. Look at a similar project in Texas called Petra Nova. Oil prices needed to be at \$75 a barrel to make it economically viable. Oil prices dropped.

Petra Nova is now closed. **Oil prices will continue to be extremely volatile in the coming years** as major car companies switch to electric vehicles.

Does Project Tundra help Minnkota prepare for the future? It does not. Minnkota is the **only** utility in ND without a flexible resource, like natural gas generation or battery storage, in their mix. Flexible resources are important to have to respond quickly to cheap renewable, intermittent energy. Minnkota loses around \$8 million a year due to inflexibility and having to sell overproduction when prices are low.

Minnkota, instead, relies on a **demand response program** for flexibility. They have been using this program for decades. Part of this program requires industrial customers to fire up their own **diesel** generators to meet peak demand needs, creating more of a CO2 emission problem. **Minnkota needs help with flexibility and preparing for a grid of the future.** Carbon Capture technology will prevent them from satisfying these needs.

I oppose 1452 because:

1. Project Tundra is a bad investment.
2. This bill allows the Industrial Commission to decide on behalf of **special interests** the best use of ND legacy funds. It does not require any cost/ benefit analysis, nor does it consider the negative effects on ND consumers.
3. Promoting bad investments will make electricity more **expensive**.
4. Project Tundra is not clean, sustainable, or reliable.
5. This bill will **fail to** adequately prepare Minnkota Power Cooperative for the future.

By funding projects like Tundra, **we are holding electricity consumers hostage with the continued threat of overinvestment in coal assets, rather** than providing them with actual **low-cost** electricity.

I urge you to keep control over legacy funds, keep their disbursement unbiased, and support projects that are beneficial to **all** North Dakotans. Support projects which have a future, such as energy storage, smart-grid investments, national transmission planning or ND-owned renewable projects. **Please, recommend a do NOT pass on HB 1452.**

You can refer to my earlier written testimony for **more details** on why I oppose this bill, including the MISO market mechanism that already exists for incentivizing reliability.

Thank you so much for your attention and your compassion for electricity consumers in ND.

11352

Good morning.

I oppose bill 14 52 for three reasons.

- First, it is a poor use of Legacy funds,
- Second, it creates an energy authority which is clearly biased towards one industry. This is how you make the free market less efficient rather than more efficient.
- Third, this bill fails to address a core problem facing all energy producers in North Dakota: that of being stuck in a sell-low, buy-high cycle.

This is a problem that does have solutions – but creating a biased energy authority isn't one of them.

The problem that energy producers face today is very similar to the problem grain producers faced 100 years ago.

100 years ago, grain producers had no way to store their grain. In the fall when North Dakota farmers harvested their grain, they had to sell it - even when the price plummeted. In the spring when they needed to buy seed, they had to pay whatever the price was - typically absurdly high. This left them in a sell-low, buy high cycle.

To solve this problem, rather than establishing a grain authority similar to what bill 14 52 proposes, our state legislature built a state-owned elevator: essentially state-owned grain storage. What this did is it allowed farmers to hold their grain in the fall until they could get a fair price. It also allowed farmers to hold some of their grain until spring for use as seed. By creating a state-owned grain storage facility, the state legislature made North Dakota wheat more valuable, helping to make the free market work better for people in North Dakota.

Today, energy producers have the same problem: there is no way to store energy. Like the grain farmers 100 years ago, this puts wind, solar, and coal in a sell low, buy high cycle.

Presently, when energy is produced in North Dakota, it has to be sold or used: it cannot be stored. When the wind blows, the sun shines, and the coal plants are churning out electricity, prices can plummet below production costs. This hurts wind, solar, and coal. Wind and solar are hurt because prices plummet at the times when they are producing the most. Coal is hurt because it has to be run at a constant rate: the coal units continue to churn out electricity even when the spot market price drops below the production cost.

The solution to this problem isn't bill 14 52 and the creation of a biased energy authority. Instead, it is the same solution that our state legislature came up with 100 years ago: we need state-owned energy storage.

State-Owned Energy Storage would enhance the value of North Dakota energy.

- First, it provides a demand for the times when the wind is blowing, the sun is shining, and coal is producing.
- Second, and more importantly, it allows you to shave off the peak in the demand at 8am and 6pm.

What this does is:

- It allows the power output of the coal plants to be reduced. Utilities are required to have generators on the ready to meet the peak demand. By reducing this peak, the amount of generation required to meet demand is reduced.
- By reducing the output of the coal plants for the entire day, more space is created to absorb the energy produced by wind and solar.
- This in turn avoids overproduction, which helps to keep the spot-market price of electricity at a more fair price for everyone.

By adding energy storage, everyone in North Dakota benefits:

- Coal, wind, and solar benefit: they get a more reasonable price for the energy they produce.
- North Dakota citizens also benefit: when spot-market prices drop below production costs, North Dakota is actually subsidizing out of state users. At those times, we are transferring money to people out of state.

State-owned energy storage would be a better use of Legacy funds since it enhances the value of multiple North Dakota resources: wind, solar, and coal. It even has the potential to generate revenue for the state – all things that bill 14 52 does not do.

In summary, I oppose bill 14 52 because

- It is a poor use of Legacy funds,
- It makes the free market less efficient in North Dakota, and
- It fails to address a core problem all energy producers face: the lack of energy storage which puts all energy producers in a sell-low, buy-high cycle.

I thank you for your time.

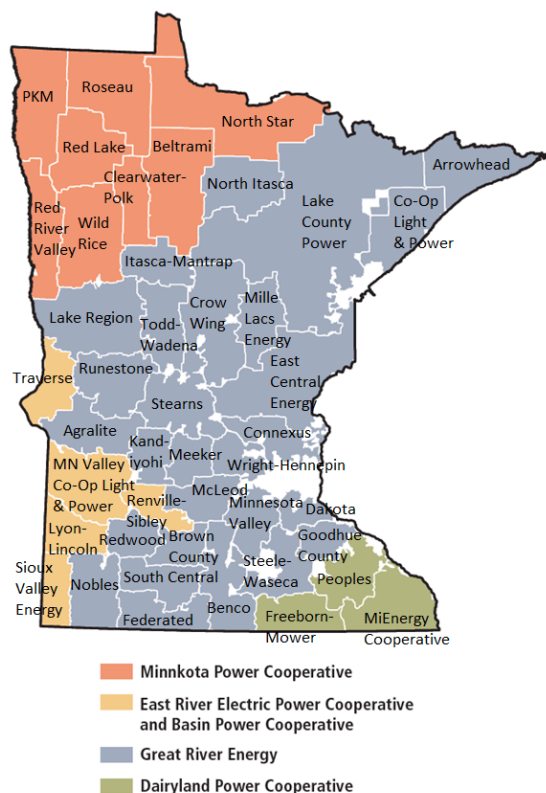
Jacob Glower
Professor in Electrical and Computer Engineering
Fargo, North Dakota

Minnesota's Electricity Sector is Transitioning but Electric Cooperatives Remain Tied to Coal-Fired Power Plants

HIGHLIGHTS

Electric cooperatives (“co-ops”) serve about one-third of Minnesota customers. Yet, while many coal-fired power plants located within the state have been retired or are slated to retire, Minnesota co-ops are tied to memberships with larger co-op entities that own coal plants elsewhere and that they intend to continue operating far into the future. Many of these coal plants run for extended periods when cheaper resources are available and have long-term fuel contracts for coal supply. Meanwhile, existing power supply contracts restrict the ability of local Minnesota co-ops to pursue alternative resources, such as renewable energy. To allow full clean energy benefits to flow to Minnesota co-ops, policymakers and stakeholders must continue exploring solutions to help facilitate coal plant retirements and increased use of clean resources.

FIGURE 1. Minnesota Co-Ops by Primary Power Provider



SOURCES: CHAN ET AL. 2019; MREA N.D.

Minnesota’s electricity generation mix is shifting away from coal. Due to pressure from low natural gas prices and competitive costs for wind and solar power, coal plants are increasingly uneconomic options. In recent years, nearly 1,000 megawatts (MW) of coal generating capacity has been retired in Minnesota, about 20 percent of the state’s total.¹

Looking ahead, the state’s largest investor-owned utility, Xcel Energy, has plans to retire all its Minnesota coal-fired power plants by 2030. Another utility, Otter Tail Power, will retire its only Minnesota coal plant by 2021. And although a third utility, Minnesota Power, has not yet announced a retirement date for the remaining coal units at its Clay Boswell plant, it has mothballed or retired smaller units at that facility and at Taconite Harbor.

This trend is helping Minnesota reduce carbon emissions from the power sector and expand opportunities for renewable energy development. Renewables generated close to 25 percent of the state’s electricity in 2017, while production from coal dropped to 39 percent in 2017 from 59 percent in 2007.²

Yet, a substantial amount—roughly 30 percent—of Minnesota’s electricity consumers are not served by the investor-owned utilities mentioned above but rather by a different type of provider known as an electric cooperative, or “co-op.” These local co-ops receive power from larger co-ops that own and operate transmission lines and power plants—including coal-fired facilities in North Dakota, Wisconsin, and Wyoming.

For the most part, these larger co-ops that directly own the coal plants have no plans to retire them³ and instead have long-term coal fuel contracts and lengthy, all-encompassing power supply contracts with their customer co-ops. This limits Minnesota

local co-ops' ability to benefit from the clean energy transition underway in the state and elsewhere. To rectify this situation, co-op leaders and state policymakers must continue exploring solutions to facilitate movement of this electric utility sector toward clean energy.

What Are Electric Co-ops?

Along with investor-owned utilities and municipal utilities, electric co-ops are entities that provide electricity service in the United States. Many co-ops were formed during the push for rural electrification in the years before and after World War II. The nonprofit co-op model brought power to many places that would not have received investment from privately owned utilities, and the consumer-owned, democratic, and locally run model still serves electricity consumers today.

In Minnesota, there are 45 co-ops serving homes and businesses (Figure 1). They range in size from serving as few as 2,000 customers to more than 130,000 (MREA n.d.). Electric co-ops serve 30 percent of Minnesota customers, represent 22 percent of

electricity sales in the state, and cover 85 percent of the state's land area (Chan et al. 2019).

Most Minnesota co-ops do not own generation resources or large transmission lines and thus are known as distribution co-ops. Historically, it would have been prohibitively expensive for each distribution co-op to build its own power plants and long-distance power lines, so they banded together to form other entities known as Generation & Transmission (G&T) co-ops. G&T co-ops build power plants and transmission lines and sell power to distribution co-ops, which are often located in multiple states. Many distribution co-ops signed long-term power supply contracts with the G&T co-ops, which allowed financing for infrastructure such as power plants and transmission lines.

The G&T co-ops that own power plants with Minnesota distribution co-op members are: Basin Electric Power Cooperative, Dairyland Power Cooperative, Great River Energy, and Minnkota Power Cooperative (Figure 1).⁴ Among other generating resources, each of these entities owns coal-fired power plants located outside Minnesota, totaling just over 5,000 MW of generating capacity (Table 1).^{5,6}

TABLE 1. Coal Plant Ownership

G&T Co-op	Coal Plant Name	Location	Ownership Percentage*	Owned Capacity (MW)	2018 Total Plant Capacity Factor	2018 Total Plant Carbon Dioxide Emissions (Tons)
Basin	Antelope Valley	North Dakota	100%	900	82%	7,606,192
	Dry Fork	Wyoming	93%	376	84%	3,355,250
	Laramie River	Wyoming	42%	723	71%	12,951,003
	Leland Olds	North Dakota	100%	667	58%	4,123,020
Dairyland	Genoa	Wisconsin	100%	318	61%	1,932,151
	John P. Madgett	Wisconsin	100%	393	55%	2,280,692
	Weston 4	Wisconsin	17%	167	54%	4,540,960**
Great River Energy	Coal Creek	North Dakota	100%	1,147	91%	10,452,780
	Spiritwood	North Dakota	100%	92	25%	538,577
Minnkota	Milton R. Young	North Dakota	34%	237	81%	6,036,179
			Total	5,020		

*Other co-owners include Wyoming Municipal Power Agency (Dry Fork); Tri-State G&T Association, Missouri River Energy Services, Lincoln Electric System, and Wyoming Municipal Power Agency (Laramie River); Wisconsin Public Service Corp. (Weston 4); and Square Butte Electric Cooperative (Milton R. Young).

**Aggregated for all Weston units.

SOURCE: S&P GLOBAL

Coal plants have enormous negative environmental impacts, including emissions of harmful air pollutants that contribute to costly and debilitating health effects such as respiratory and cardiovascular diseases and massive amounts of heat-trapping carbon dioxide pollution (UCS 2019). They are also increasingly expensive to operate. While many factors are making coal plants uncompetitive economically, there are at least two that could be addressed by plant owners and decisionmakers that will be examined here: uneconomic operations and fuel supply contracts.

Uneconomic Coal Plant Operations

Coal plants can often operate uneconomically, as owners can require their coal-fired power plants to run at times when it would be cheaper to purchase power from the market instead. This is especially true of plants owned by entities that can pass the costs on to their customers, including vertically integrated utilities and public power utilities such as electric power co-ops (Daniel 2018).

According to 2017 Union of Concerned Scientists (UCS) research on coal plant operations, plants owned by the G&T co-ops discussed here operate for extended periods when cheaper resources are available, resulting in excess costs to customers, referenced in Table 2 as the customer burden from overgeneration.

As low natural gas prices and cheaper renewables continue to put pressure on wholesale market prices, the plants are likely to further burden customers when operated uneconomically. The G&T co-ops could therefore adjust the way the plants are offered into wholesale markets instead of “must running” them year-round—by not running the plants as often (or retiring them) and replacing the electricity with renewables, efficiency, and market purchases.

Coal Supply Contracts

Coal plant owners purchase their coal supply in different ways. Some use purchases for immediate delivery (i.e., spot market), some use short-term contracts of five years or less, and some use long-term contracts. Recent UCS research found that nationally 90 percent of coal (weighted by heat content) is purchased via contracts that are set to expire in five years or less and that over half of all coal is purchased on the spot market (Daniel 2019a). In addition, merchant generators (i.e., independent power producers) procure two-thirds of coal via the spot market and none have any contracts longer than 20 years. In contrast, public power entities, like electric co-ops, and regulated utilities are much more likely to sign longer contracts, decisions that may have made sense in years past when coal was the cheapest option—but now result in

TABLE 2. Plant Operations

Plant	Customer Burden from Overgeneration 2015–2017*
Antelope Valley	\$<1 Million
Dry Fork	n/a**
Laramie River	\$8 Million
Leland Olds	\$2 Million
Genoa	\$26 Million
John P. Madgett	\$27 Million
Weston 4	\$3 Million***
Coal Creek	\$21 Million
Spiritwood	n/a**
Milton R. Young	\$6 Million

*All values rounded to nearest million. Values aggregated to plant level and not prorated based on ownership percentage. Economic losses are evaluated on accumulated monthly losses and not offset by economic gains in subsequent months.

**n/a = not analyzed. Some plants excluded from original analysis due to lack of data, incomplete data, or other reasons; not indicative of plant economics and does not suggest plant is or is not economic.

***Aggregated for all Weston units.

SOURCE: UCS CALCULATIONS

customers being locked into buying coal for years to come (Daniel 2019a).

Except for Dairyland’s plants, which use spot purchases and short-term contracts, the co-op coal plants examined here have coal fuel contracts running to 2037, 2041, 2045, and even 2071 (Table 3). Several of the plants—including Antelope Valley, Dry Fork, Leland Olds, Coal Creek, and Milton R. Young—are considered “mine mouth” plants because they are located close to the coal mines that supply them.

Collectively, these plants cost co-op consumers more than \$93 million in uneconomic generation costs from 2015 to 2017. Coal supply contracts are often asserted as one reason why coal plants must continue operating even when running the plant loses money (Daniel 2019a). Coal plant owners point to these contracts as justification for operating their plants year-round, asserting that the agreements contain liquidated damages clauses requiring the plant owner to pay for the fuel regardless of whether it is taken (Daniel 2019a).

TABLE 3. Coal Supply Contracts

Plant	Location	Coal Contract Duration	Tons Purchased (2018)	Mine Mouth?	Cents/kWh (2018)
Antelope Valley	North Dakota	2037	5,278,000	Yes	1.30
Dry Fork	Wyoming	2071	1,970,000	Yes	0.77
Laramie River	Wyoming	Short/2041	6,026,000	No	1.05
Leland Olds	North Dakota	2037	2,831,000	Yes	1.62
Genoa	Wisconsin	Spot/Short	761,000	No	2.64
John P. Madgett	Wisconsin	Spot/Short	1,142,000	No	2.74
Weston 4	Wisconsin	Spot/Short	2,508,000	No	2.33
Coal Creek	North Dakota	2045	8,348,000	Yes	1.64
Spiritwood	North Dakota	2045	305,000	No	1.79
Milton R. Young	North Dakota	2037	4,302,000	Yes	1.82

SOURCE: S&P GLOBAL; UCS CALCULATIONS

Considering the small price savings associated with long-term fuel contracts, and the large liability the contracts represent in a changing market, lengthy purchase agreements and the liquidated damages clauses that accompany them can be risky for customers (Daniel 2019b). This is true even if it may have made sense to enter into the contracts at the time they were signed. Today, however, as coal plants continue to face declining competitiveness in power markets, it may be more sensible to reduce or retire plants rather than operate them uneconomically to avoid liquidated damages—and either absorb the loss or seek renegotiation of long-term supply contracts.

Challenges Facing Minnesota Co-ops Desiring Less Coal Power and More Clean Energy

As described above, Minnesota is phasing out coal-fired power plants and working to decarbonize its power sector. Yet, Minnesota has a substantial number of customers whose local co-ops are members of coal plant-owning G&T co-ops that do not have plans to close their often-uneconomic plants (aside from Dairyland’s recent announcement that it will retire the Genoa plant in 2021).

Distribution co-ops are often faced with contractual barriers to decarbonizing. Many of the power supply contracts between distribution co-ops and G&T co-ops include what are known as “all-requirements” provisions, which mean that the local co-ops are

committed to receiving all their power supply needs from their G&T co-ops with only limited options for pursuing supply from alternative generators or building their own resources (Chan et al. 2019). For instance, Great River Energy contracts with 28 of Minnesota’s distribution co-ops, and 20 of these agreements are for all-requirements service with a carve-out option of only 5 percent for self-generation (Chan et al. 2019).

In addition to their breadth, the contracts are also long-lived. Great River Energy’s all-requirements contracts mostly extend to the 2040s, while Basin Electric’s run until 2075 (Chan et al. 2019). Finally, the contracts can be difficult to change due to provisions that require approval from entities such as lenders and trustees for any modifications (Farrell 2016).

These contractual arrangements mean that distribution co-ops are for the most part beholden to the generation supply choices of the G&T co-ops. The local co-ops are often prohibited from building many renewable resources themselves and cannot purchase clean energy from other suppliers either.

Of course, as member-owners of the G&T co-ops, local co-ops can and do advocate for changes in generation portfolios. But decision-making within G&T co-ops is complex: they are large organizations, often serving members across multiple states, with indirect representation of all customer co-ops (Chan et al. 2019).

Positive Steps, but Coal Remains a Barrier

The G&T co-ops discussed here are subject to certain Minnesota energy policies—such as contributing to the state’s greenhouse gas reduction goals, achieving a minimum amount of renewable energy through the state’s Renewable Energy Standard, and reaching certain levels of energy efficiency under its Conservation Improvement Program. In addition to complying with clean energy requirements, one of the G&T co-ops—Great River Energy—has made a commitment to achieve 50 percent renewable energy by 2030. It has also collaborated with some of its members on distributed energy projects (see, e.g., Dakota Electric Association 2019).

But Great River Energy, Basin Electric, Dairyland, and Minnkota are also keeping coal-fired power plants in their supply portfolios. The results are that Minnesota co-ops are slower to decarbonize than other electric utilities in the state and their customers are facing the risk of higher costs from uneconomic electricity generation, environmental regulations, and rising fuel costs.

Because co-ops are often located in rural areas, they have enormous renewable energy potential that could be deployed instead of coal. The benefits are numerous, including for the agriculture sector: for example, farmers and ranchers who lease land to wind power projects receive over \$250 million a year in lease payments nationwide, providing a valuable income stream to balance commodity price fluctuations and weather variability (AWEA n.d.). Expanding clean energy resources can also provide jobs and tax revenue for rural communities (see generally Krishnaswami and Mittelman 2018).

What Options Are Available?

Co-ops’ key features include local control and democratic decision-making. But, as discussed above, the historical evolution of power supply is an obstacle to many local co-ops’ ability to choose cleaner, lower-cost options that may be available.

One path to addressing this problem is for co-ops and elected officials to put pressure on G&T co-ops to help distribution co-ops build clean energy resources and to allow more self-supply. G&T co-ops are being forced to reckon with the decline of coal—and distribution co-ops can help move them in the right direction. Indeed, distribution co-ops do have tools at their disposal to influence the G&T co-ops that supply their power. Citing its members’ desire for clean energy and affordability, Tri-State Generation and Transmission Association, one of the largest G&T co-ops in the country with operations in Colorado, Nebraska, New Mexico, and Wyoming, announced plans to retire two more of its coal plants, citing also the low costs of renewable energy (Tri-State

2020). Prior to the announcement, two distribution co-ops had left Tri-State membership and two more are actively seeking exit fee determinations (Walton 2019b).

In addition, Hoosier Energy—a G&T co-op with member co-ops in Indiana and Illinois—has just announced plans to retire its 1,070 MW Merom Generating Station coal plant in 2023 as part of a new resource plan focused on reliability, affordability, and environmental sustainability. Hoosier Energy estimates that the plan will save its member co-ops an estimated \$700 million over the next 20 years (Hoosier Energy 2020). Finally, as noted above, Dairyland Power Cooperative announced on January 24, 2020, that it will retire the Genoa coal plant in 2021.

Another path is continued advocacy before the state legislature and state regulators for increased oversight or other forms of relief. Although, due to co-ops’ democratic governance structure, state and federal laws have not traditionally regulated them in the same way as private investor-owned utilities, co-ops are subject to state energy policy and to certain Minnesota Public Utilities Commission oversight mechanisms.⁷ In Colorado, regulators took steps to increase their oversight of Tri-State’s resource planning, which—coupled with pressure from member co-ops leaving or seeking to leave Tri-State—preceded Tri-State’s January 2020 coal plant retirement announcement (Walton 2019a).

In order to ensure a clean energy transition for all Minnesotans, state policymakers must continue to examine options for facilitating the phaseout of coal-fired power plants owned by the multistate electric co-ops supplying Minnesota customers. Co-ops led the way for the electrification of rural America—we should ensure they can lead their customers to the benefits of a clean energy future as well.

James Gignac is lead Midwest energy analyst in the UCS Climate & Energy Program.

ACKNOWLEDGEMENTS

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ENDNOTES

- 1 Since 2010, the following Minnesota coal plants have been retired, mothballed, or converted to run on gas: Silver Lake (2015), Black Dog (2015), Syl Laskin (2015), Taconite Harbor (2015), City of Austin’s Northeast Plant (2016), City of Willmar (2017), and Clay Boswell Units 1 and 2 (2018).

- 2 Minnesota Department of Commerce, Minnesota Renewable Energy Update (November 2018), <http://mn.gov/commerce-stat/pdfs/2017-renewable-energy-update.pdf>
- 3 Notably, on January 24, 2020, Dairyland Power Cooperative announced plans to retire its Genoa plant in 2021.
- 4 East River Electric Power Cooperative is a G&T co-op but obtains power from Basin Electric.
- 5 By comparison, Xcel Energy (d/b/a Northern States Power) has 2,388 MW of coal capacity, which, as stated previously, the company plans to retire completely by 2030.
- 6 Note that, with respect to Basin Electric's Wyoming plants, Dry Fork and Laramie Units 2-3 are connected to the Western Interconnect, while Laramie River Unit 1 is connected to the Eastern Interconnect. For purposes of this issue brief, all coal plants owned by G&T co-ops of which Minnesota co-ops are members are included.
- 7 See Minn. Stat §216B.2422, subs. 2.(b), 2b (2019). <https://www.revisor.mn.gov/statutes/cite/216B.2422>.

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FIND THIS DOCUMENT ONLINE: www.ucsusa.org/resources/minnesota-electric-cooperatives

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Orphaned South Dakota Gas Wells Could Soon Power Bitcoin Mining



by **Seth Tupper** • Published on February 24, 2021



One of the orphaned Spyglass natural-gas wells.

SD DENR

POLITICS AND PUBLIC POLICY

Just when it looked like 40 orphaned natural-gas wells in northwestern South Dakota would finally be plugged, the story took a turn into the realm of cryptocurrency.

A Texas company, Spyglass Cedar Creek, drilled the wells 15 years ago on the vast grasslands in the vicinity of Buffalo.

South Dakota was stuck holding the bag [after the project failed](#), because the state had only required the company to post about \$30,000 in bonds. Last fall, the state hired a contractor to plug the wells for about \$430 000. The contractor finished seven of the wells before pausing for the winter.



Then, multiple companies expressed interest in the remaining wells. So the state put the mineral rights associated with seven of the un-plugged wells up for a lease auction last month. A Wyoming company, [Highwire Energy Partners](#), won the leases for \$58,640.

Ryan Brunner, the state commissioner of school and public lands, conducted the auction. He said Highwire Energy Partners is not a typical oil and gas operator.

“Their operation is to put together generators and burn the natural gas on-site to mine bitcoin and cryptocurrency,” Brunner said.

Actually, the natural-gas wells will power the computers that create bitcoin. Here’s how it works: Bitcoin is a digital currency secured by cryptography – a cryptocurrency. Bitcoins are digitally “mined” into existence. But this isn’t “dig in the dirt” mining. Computers create new bitcoins when they solve complex numerical problems.

Will Reese, of Casper, Wyoming, is one of the partners in Highwire Energy.

“I’ve called it the minting process,” Reese said. “This is how new bitcoins are created and sent into the market every day. It’s actually every 10 minutes a block is mined somewhere in the world.”

It takes lots of computers running 24/7 to make a successful bitcoin mining operation. And all those computers use a lot of electricity.

So bitcoin miners look for low-cost power. Reese said South Dakota’s orphaned gas wells are a good source. He hopes to have the site up and running in six months.

The company will use the natural-gas wells to fire a generator. The generator will power computers. The computers are housed in small fiberglass structures placed over the wells.

“You step into the door and to your right you’ll see 70 to 90 computers that more or less look like big desktop computers,” Reese said. “We have them racked against the wall.”

The company already has similar operations in Wyoming.

“What we do with the bitcoin is what you would do with Apple stock, or anything else,” Reese said. “It goes onto our brokerage account. Our portfolio reflects a certain value, and we can – for our investors or for our operational costs – liquidate that into cash on a moment’s notice. It’s just like getting onto your E-Trade account.”

Highwire Energy Partners must post a \$100,000 bond with the state (the Legislature raised bonding



minimums last year in reaction to the Spyglass situation). The company also must pay a \$2,000 annual rental fee until it gets the wells in production, at which point the fees go away but monthly royalties are due to the state. The royalties are 12.5 percent of the value of the natural gas, as determined by the spot price of natural gas in a nearby pipeline.

Although Highwire Energy only has leases on state-owned minerals so far, Reese said the company may have interest in the rest of the wells, including some with privately owned mineral rights.

The value of a single bitcoin recently spiked above \$50,000 for the first time ever. But not everyone is sold on it. U.S. Treasury Secretary Janet Yellen [recently said](#) she fears bitcoin is used for illicit finance, and she called bitcoin's energy consumption "staggering." [One study](#) estimates the global bitcoin network uses as much electricity as the country of Belgium.

Will Reese said Highwire Energy Partners may be the first company using natural gas to mine for bitcoin in South Dakota. Meanwhile, several digital-currency banks are now registered here, because of the state's favorable laws for banks and trusts.

One of those companies, called [Anchorage](#), has an office in Sioux Falls. Last month, Anchorage became the [first nationally chartered digital-asset bank](#).



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Bitcoin Mining Can Be Profitable, If You Generate The Power



Robert Anzalone Contributor ⓘ ⊕

Crypto & Blockchain

I report on the adoption of cryptocurrency, stablecoin and blockchain.



Bitcoin mining at 20MW, the Team at Greenidge located in the Finger Lake Region of New York State, ... [+] GREENIDGE

The New York Finger Lake Region is known for its wine and glacial

Greenidge Generation is a former coal-fired electrical power plant that has converted to natural gas. They supply electrical power to New York State's residents. Every day Greenidge has to bid in a competitive power market – sometimes, they make a profit when energy demand is higher. The company has been in business since 1937 but, in the last decade, suffered against cheaper power sources. The facility was mothballed in March 2011. Competition from cheaper shale natural gas supplies and coal exports from China put the old company into economic distress. Atlas Holdings bought the plant in 2014 and converted it to natural gas in 2017.



BROOKLYN, NEW YORK - JULY 4: Six meters placed by National Grid measure natural gas consumption in a ... [+] GETTY IMAGES

Atlas, which buys and transforms distressed industrial companies, helped turn the company into a more efficient energy model. But profits were always tight. It was in 2018 that CEO Dale Irwin and CFO Tim Rainey had the idea to use excess capacity to mine Bitcoin. This was a unique idea in the United States. Rainey says,

"Cryptocurrency mining was an idea that evolved following discussions with our Board and leadership team, as we explored the best way to utilize the unique assets we have at the facility. Our Board approved a plan to pursue Bitcoin mining."

Dale Irwin said, "We started with a couple of S9's and some GPU rigs in early 2018 to familiarize ourselves with the economics of the machines and learn how to operate and run them. We turned that into a small test pilot of several hundred machines from many different manufacturers in May of 2019. After completion and

analysis of the test pilot, we built the current data center within four months, starting our larger-scale mining operation in January 2020." They currently operate 8,500 of the latest generation miners from Bitmain and other manufacturers.

Greenidge is using over 20 megawatts (MW) of power to mine Bitcoin, which makes it the largest energy company in the U.S. with this kind of strategy. In comparison, 20MW is not very big, next to other countries. There are larger Bitcoin mining facilities. The University of [Cambridge's Bitcoin Electricity Consumption Index](#) shows that global power use is estimated to be 7.25 gigawatts (GW), where China uses a bit over 71% of the global total.

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Riot Blockchain, by comparison, said in their July 16th 2020 press release that their aggregate power consumption would be 12.8 megawatts.

The company purchases natural gas through forward contracts setting a threshold price. Electric power production costs will fluctuate and influence the decision to mine crypto or sell power to the grid.

Greenidge wants to increase its energy consumption. The company has plans to use the plant's total capacity of 104MW next year.

Mining Bitcoin and cryptocurrency is an energy-intensive enterprise. Some argue that it is a waste of energy and that digital assets are purely an environmental drain. One megawatt, by some estimates, could power about 800 homes on average per year. But this is a difficult statistic to estimate; electric consumption changes by region and need.

The company calls itself a power plant-mine hybrid, where it can generate more value being able to provide power to New York's grid or mine cryptocurrency. The choice to one or the other depends on what is more profitable on the day. Irwin continued to say, "Without crypto mining, it was economically unfeasible for us to provide capacity and energy to the state grid year-round and to continue providing employment opportunities to the local community, which provides the bulk of our workforce."

Rainey said, "As both the cryptocurrency markets and the power markets are constantly fluctuating, we do whichever is more profitable at any given time - either sell the generated power or mine crypto with that power. Although there is no fixed threshold of revenue from selling power that would make us want to sell the power instead of mine crypto, currently that number would be over \$100 per MWh of power that we generate."

This model is unique as mining Bitcoin is not a trend in the power industry. If there are other power companies in similar situations, could this be a sustainable way to add income?

Tim Rainey said, "Without the mining operation, we would not be running most of the time, but if we ran around the clock, year-round, we would generate revenues of about \$20/MWh. Bitcoin mining revenue with the latest generation hardware ranges anywhere from

\$70/MWh to north of \$200/MWh depending on price, global hashrate and difficulty."

Time will tell, but Rainey did add, "We've been able to capture over \$500k additional revenue during hours when we would not otherwise have been dispatched to be online. Additionally, we are unique in that the same highly-skilled engineers, electricians, and other technicians that are on-site running the power plant 24/7 also help operate and maintain the mining hardware."

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Testimony of Dakota Resource Council
House Bill 1452
April 4th, 2021

1 Chairman Holmberg & members of the committee, my name is Janessa Thompson (#1033) and I am
2 testifying on behalf of Dakota Resource Council and our members. Thank you for allowing me to testify
3 today. I stand here today in opposition of HB 1452 as it is currently written.

4 Dakota Resource Council (DRC) is a non-partisan grassroots group of landowners, ranchers, farmers, and
5 other citizens. A key part of our mission is to promote the sustainable use of North Dakota's natural
6 resources. When we first heard of the idea of establishing a "clean sustainable energy authority" we
7 thought we would be in support of it. Unfortunately, upon reading HB 1452, it appears from our view to
8 be more of an Authority to provide funding to special interest groups without transparency. It appears that
9 the industrial commission has significant power to give recommendations. There is no voting
10 representation from the wind, solar, or other renewable energy sectors. Also, this bill focuses in on
11 reliability, yet batteries are not included in the items to be funded language. Batteries provide reliability to
12 the grid and will play a significant role in grid reliability in the future.

13 The first major issue is the representation for the eight voting members of the authority. On page 5, lines
14 4-9, HB 1452 outlines who will provide representation, with voting powers, for the clean sustainable
15 energy authority. This "Clean Sustainable Energy Authority" lacks representation for all types of energy,
16 including wind, solar, and other renewable energy industries. While there is two voting members from the
17 renewable energy council, it is important to note that the renewable energy council also does not contain
18 any representation from wind, solar, or other renewable energy sectors. For a "clean sustainable energy
19 authority", this appears to be more of a special interest slush fund. We are not opposed to having
20 representation for lignite and oil & gas, however, in addition to the renewable energy council, there
21 should be representation from the solar, wind, and other renewable industries. This Authority, and
22 allocated funding, does not even try to hide that it does not want "all-of-the-above" that is frequently
23 touted by the state publicly.

24 On page 3, lines 11 – 29 in the bill is where the commission is given powers to make recommendations to
25 the Authority. "The commission may identify and make recommendations to the clean sustainable energy
26 authority on technologies related to low - emission advancements..." Commission is defined as the
27 industrial commission on page 4, line 17. This is giving vast powers to the industrial commission to make
28 recommendations to dole out millions of dollars in public monies and Legacy Fund earnings with very
29 little oversight and in a way that will lack transparency as to where all that money is going.

30 On page 8, beginning on line 8 is where we have issues with the transparency in the bill. We understand
31 that with innovative technology/research there are trade secrets and the sharing of confidential
32 information that could jeopardize a project. However, DRC questions the confidentiality around
33 approving grants and other funding from the clean sustainable energy authority. As it is currently written,
34 companies seeking money from the Authority can remain secret forever. We do not believe this to be
35 ethical and there should be some process to unseal after a set period of time. In addition on page 8, lines 9
36 -15 it states "To the extent the commission or authority determines the materials or data consist of trade
37 secrets or commercial, financial, or proprietary information of individuals or entities applying to or
38 contracting with the commission or receiving commission services under this chapter, materials and data
39 submitted to, made by, or received by the commission or authority, are not public records subject to
40 section 44 - 04 - 18 and section 6 of article XI of the Constitution of North Dakota, and are subject to
41 section 44 - 04 - 18.4." In our view, this gives the commission and Authority basically a free pass to
42 determine projects and funding that are not going to be subject to public records laws. Again, the public

Testimony of Dakota Resource Council

House Bill 1452

April 4th, 2021

43 deserves to know where their money is going and ability the scrutinize it, especially when millions of
44 dollars in Legacy Fund earnings are being funneled to this Authority. The lack of transparency in this bill
45 essentially creates a blackhole for public monies.

46 We believe in moving North Dakota towards a clean and sustainable future in energy is a worthy goal, but
47 HB 1452 misses the mark in several ways as stated above. Carbon capture technologies for coal, the
48 likely recipient of a large portion of this funding, have been tried around the world and failed both
49 technically and economically.¹ Petra Nova was a carbon capture project in Texas that was recently
50 mothballed as they were not able to capture anywhere close to the projected capture and so were
51 disqualified from the 45Q tax credits.² Proposed projects in ND (like Project Tundra) are modeled after
52 Petra Nova and are similarly anticipated to fail.³ Instead of funding expensive, high-risk projects and
53 bailing out a dying industry with tax dollars, we should be investing in economic diversification,
54 transition planning, community development, and retraining programs for people working in the coal
55 industry and for communities who are reliant on coal today.

56 I urge the committee to oppose HB 1452 or amend it to have more appropriate representation, increased
57 transparency, and inclusion of battery projects. We urge the committee to recommend a **DO NOT PASS**
58 on HB 1452.

59

60

¹ <http://www.worc.org/carbon-capture-sequestration-report/>

² https://ieefa.org/wp-content/uploads/2020/08/Petra-Nova-Mothballing-Post-Mortem_August-2020.pdf

³ https://ieefa.org/wp-content/uploads/2020/09/Project-Tundra_A-Step-in-the-Wrong-Direction_September-2020.pdf



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Testimony of:

Geoff Simon, Lobbyist #144
in support of HB 1452
Senate Appropriations Committee

Chairman Holmberg and Committee members:

On behalf of the city, county and school district members of the Western Dakota Energy Association (WDEA), we wish to express strong support for House Bill 1452 to establish a clean sustainable energy authority and a clean sustainable energy fund. Our association represents North Dakota civic leaders and citizens who live in the oil, gas and coal-producing counties. The livelihood of many of these communities depend on the success of the energy industry, and they in turn provide vital services that support energy development.

Our association board of directors includes county commissioners, mayors, council members and school superintendents from communities throughout western North Dakota. The legislation before you is about the future of North Dakota's fossil fuel industry, and our member communities will live in that future. The future could be bleak if the anti-fossil fuel agenda of the Biden administration prevails, or it could be very bright if we are able to embrace new technologies to ensure the continued economic viability and sustainability of the oil, gas and coal industries.

Some might ask why WDEA should have a member on the authority that would be created by HB 1452. It's because our members live in energy-producing counties, so have a powerful incentive to see the industry succeed. Our members have expertise and experience in fostering energy research and development. Two former WDEA presidents currently serve on the Oil & Gas Research Council, and another of our board members serves on the Lignite Research Council.

WDEA wishes to thank Senator Holmberg and Representative Bosch for sponsoring this important legislation, and urges the committee's strong support of HB 1452.

Thank you for the opportunity to submit testimony.



Project Tundra: A Step in the Wrong Direction

Carbon Capture Project Carries Large Risks for Investors and Co-op Members

Executive Summary

Square Butte Electric Cooperative and Minnkota Power Cooperative own and operate Unit 2 at the Milton R. Young (Young Unit 2) coal-fired plant in Center, N.D. The cooperatives are proposing to retrofit the 43-year-old, 455 megawatt-capacity unit with equipment to capture 90% of its carbon dioxide (CO₂) emissions and either sequester the CO₂ underground or sell it for use in enhanced oil recovery (EOR) activities.

The proposal, dubbed the Tundra Project by its supporters, received \$16.9 million this spring from the U.S. Department of Energy (DOE) to complete the permitting work needed for two underground injection wells and then build them. Last fall, the project was awarded \$9.8 million in DOE funds to complete a front end engineering and design (FEED) study for the project, with the goal of developing “design, costing and performance data needed to commence project financing activity,” as well as a final project schedule.

In short, this DOE money is being used to start the project, instead of evaluating whether the project is viable in the first place. This is critical, as Minnkota has pledged it will not pursue Project Tundra if it “substantially increases electric rates.”¹

IEEFA’s analysis of the project shows it faces significant risks and uncertainties that could undermine its economic viability and lead to higher electric rates for the ratepayers of the cooperatives that buy power from Minnkota or Minnesota Power. These include:

- Uncertainty over the cost of adding the new carbon capture facility and associated project infrastructure;
- The potential that significant problems will be experienced during the scaling up of the planned Fluor capture technology from its small tested size (5 megawatts to 40 megawatts) to a commercial-scale 455MW coal plant;
- Uncertainty whether the project will capture enough CO₂ so that it can be financed entirely thru federal 45Q tax credits. If not, Minnkota would be forced to borrow additional funds to build and, perhaps, operate the project,

¹ [Project Tundra website.](#)

thereby incurring unexpected costs that will be borne by ratepayers, not investors;

- Uncertainty over the cost of capturing the CO₂ produced by the plant;
- Uncertainty over the cost of sequestering captured CO₂;
- Young Unit 2 is not a low-cost generator and it is quite possible, if not likely, that the cost of the electricity from the plant will be substantially higher if it is retrofitted for carbon capture. Ratepayers already are paying far more for electricity from the plant than they would if their co-ops purchased the same amount of power from competitive wholesale markets. This can be expected to get worse in future years, especially if Project Tundra is undertaken; and
- Uncertainty whether there will be a viable market for using the captured CO₂ for EOR activities.

Minnkota has acknowledged that carbon capture, utilization and storage technology has not been adequately demonstrated for nationwide use.² However, it is gambling that Project Tundra can succeed because of its “unique geographical location.”³ If it loses this bet, the ratepayers of the 11 cooperatives that own Minnkota and Square Butte may have to pay substantially higher rates for power from Young Unit 2, or indeed, for a failed project.

Square Butte and Minnkota Power would be well-served by taking the time afforded by the DOE grants to weigh the risks carefully—going forward risks putting their co-op customers on the hook for significant construction cost overruns and long-term responsibility for higher operations and maintenance costs. A better option would be to follow the lead of Great River Energy which earlier this year announced plans to retire the younger, larger and better running Coal Creek station, close Young Unit 2, and embrace the renewable energy transition by building cleaner, lower-cost wind with storage to meet its capacity needs.

² Minnkota Power Cooperative. [In the Matter of Minnkota Power Cooperative Inc.'s 2019 Resource Plan](#). June 28, 2019, p. 39.

³ *Ibid.*

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Risk No. 1: Uncertainty Over the Cost of Adding the Carbon Capture Facility and Associated Project Infrastructure

Minnkota has offered a range of different estimates for the capital cost of retrofitting Young Unit 2 for carbon capture. First, early in 2019, Minnkota submitted its 2019 integrated resource plan (IRP) to the Minnesota Public Utilities Commission that projected that Project Tundra, the official name for the carbon capture retrofit initiative, would cost between \$1.3 billion and \$1.6 billion (with associated EOR infrastructure, where appropriate).⁴ However, the Project Tundra website presents a much lower \$1 billion cost for the project.⁵

It is vital to put those estimates in context, and doing so shows that Minnkota's numbers are unreasonably optimistic. The capital cost of building the 240MW Petra Nova facility was \$1 billion, or \$4,166 per kilowatt (kW), in a mix of 2014 to 2016 dollars.⁶ This converts to a cost of nearly \$5,000 per kW in 2026 dollars. Minnkota's apparent range for the cost of retrofitting Young Unit 2 with CO₂ capture is between 33% and 58% lower, on a per-kilowatt basis than Petra Nova's actual cost, adjusted to 2026 dollars.

The theory underlying the development of new technologies, such as carbon capture at commercial-scale power plants, is that over time, lessons learned from the construction and operation of new plants will drive down the prices for building and running each successive unit. For example, the cost of installing new utility-scale solar capacity declined by nearly 70% between 2010 and 2018 as a result of the lessons

Project Participants and Background

Square Butte Electric Cooperative (Square Butte) owns Unit 2 at the Milton R. Young Station (Young Unit 2), a 455 megawatt, mine-mouth generating station located near Center, N.D.. Young Unit 2 burns lignite. It began commercial operation on May 6, 1977.

Both Square Butte and Minnkota Power Cooperative (Minnkota) are owned by the same 11 member-owned electric distribution cooperatives in eastern North Dakota and northwestern Minnesota. Minnkota operates Young Unit 2 for Square Butte.

Currently, Minnkota and Minnesota Power Company each purchase 50% of the generation from Young Unit 2 from Square Butte. Minnkota also purchases 28% of Minnesota Power's share of the generation under a separate agreement.

Minnkota says the Tundra Project would add equipment to capture 90% or more of the carbon dioxide (CO₂) produced at Young Unit 2 and then either sequester the captured CO₂ in an underground geological formation or use it for enhanced oil recovery (EOR).

The plan is to fund the retrofit work by using the federal government's recently expanded 45Q carbon capture tax credit program. Each metric ton of CO₂ that is sequestered is eligible for a \$50 federal tax credit. Each metric ton that is used for EOR is eligible for a \$35 federal tax credit.

Minnkota is not eligible to use the federal tax credits. Therefore, it will have to find a partner or outside investor that will be able and willing to fund the capital cost of retrofitting Young Unit 2 for carbon capture.

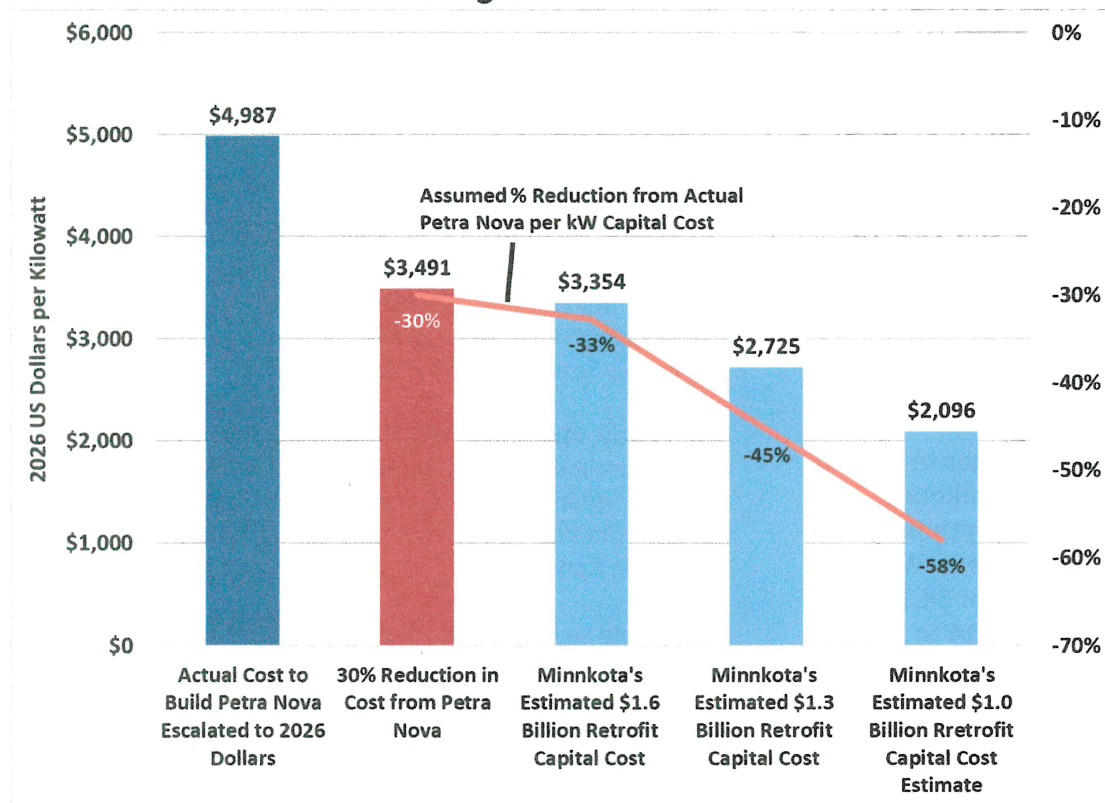
⁴ *Ibid*, p. 40.

⁵ Project Tundra website.

⁶ EIA. Petra Nova is one of two carbon capture and sequestration power plants in the world. October 31, 2017.

learned in the building and installation of 24.7 gigawatts (GW) of new solar capacity.⁷ Similarly, the price of installing new wind capacity fell by 40% between 2009-2010 and 2018 as a result of the lessons learned during the installation of 56GW of new wind capacity.⁸

Figure 1: Actual Petra Nova Capital Cost vs. Minnkota Estimated Range of Retrofit Costs for Milton R. Young Unit 2



Source: EIA, [Lignite council to push for carbon-capture project this year](#).

However, carbon capture technology is not like solar and wind technology. The decline in solar and wind prices was driven by significant research and development investment, robust competition among suppliers and thousands of new commercial projects. By contrast, there are only two carbon capture projects at coal-fired power plants in the entire world—Petra Nova and Boundary Dam 3 in Saskatchewan. Unlike with solar and wind, few carbon capture initiatives are in play, meaning costs for the next projects are unlikely to decline significantly.

Moreover, instead of assuming that the cost of retrofitting new carbon capture technology to existing coal-fired generators would decline over time, Minnkota is assuming that the cost of retrofitting Young Unit 2 with CO₂ capture—making it the very next (or at most, one of the very next) commercial-scale power plants in the

⁷ LBNL. [Utility-Scale Solar: Empirical Trends in Project Technology, Cost, Performance, and PPA Pricing in the United States, 2019 Edition](#). December 2019.

⁸ U.S. Department of Energy. [2018 Wind Technologies Market Report](#). August 2019.

U.S. to be retrofitted with carbon capture technology—would immediately be 33% to 58% lower (on a dollar per kW basis) than the cost of building the Petra Nova plant in Texas.

Another factor undercutting Minnkota's optimistic project cost estimates is that it will not be using the same Mitsubishi-based technology used at Petra Nova. Instead, the capture technology planned for Project Tundra was developed by Fluor and has never been operated at commercial scale capturing CO₂ from power plants. In fact, the only experience for the Fluor technology is capturing the CO₂ from a 40MW slipstream of a gas-fired combustion turbine from 1991 to 2005 and capturing the CO₂ from a 5.5MW slipstream at the 757MW Wilhelmshaven coal plant in Germany.^{9,10} Consequently, Project Tundra will involve a significant scaling-up of the technology, and the plant will be the first commercial-scale application of the Fluor capture technology at an operating coal-fired generator.

In other words, the Young retrofit will be a first-of-a-kind project unlikely to benefit significantly from the development experience at Petra Nova. But that is exactly what Minnkota is assuming: That it will be able to complete a 10- to 100-fold scale-up of Fluor's CO₂ capture technology for substantially less than it cost to build Petra Nova. That does not seem realistic.

Other estimates for CO₂ retrofits suggest that the cost of adding carbon capture will be substantially higher than Minnkota has cited. For example, NRG, has said that it could build a second Petra Nova for 80% to 90% of the cost of the first one, suggesting a savings of only 10% to 20%.¹¹

The International Energy Agency, an advocate for carbon capture, has estimated that the next generation of power plant carbon capture projects (that is, those after Petra Nova) will achieve 25 to 30 percent reductions in both capital and operating costs.¹² The National Association of Regulatory Utility Commissioners (NARUC) has noted that the IEA's projected reductions in the next generation of power plant CCS projects, "... support the idea that costs will come down with more facilities."¹³

It is possible that the cost of retrofitting Young Unit 2 with CO₂ capture will achieve some cost savings from (1) lessons learned at Petra Nova, (2) the reuse of facilities at the plant and (3) some economies of scale. However, it also is quite possible that unanticipated problems will occur in scaling up the CO₂ capture technology from the small facilities where its feasibility has been tested.

Such technology scale-up activities almost always lead to unanticipated problems and additional costs, both during construction and operation. For example, the

⁹ U.S. Department of Energy. [Carbon Capture Opportunities for Natural Gas Fired Power Systems](#). January 2017.

¹⁰ U.S. National Energy Technology Laboratory. [Carbon Capture and Storage Database](#).

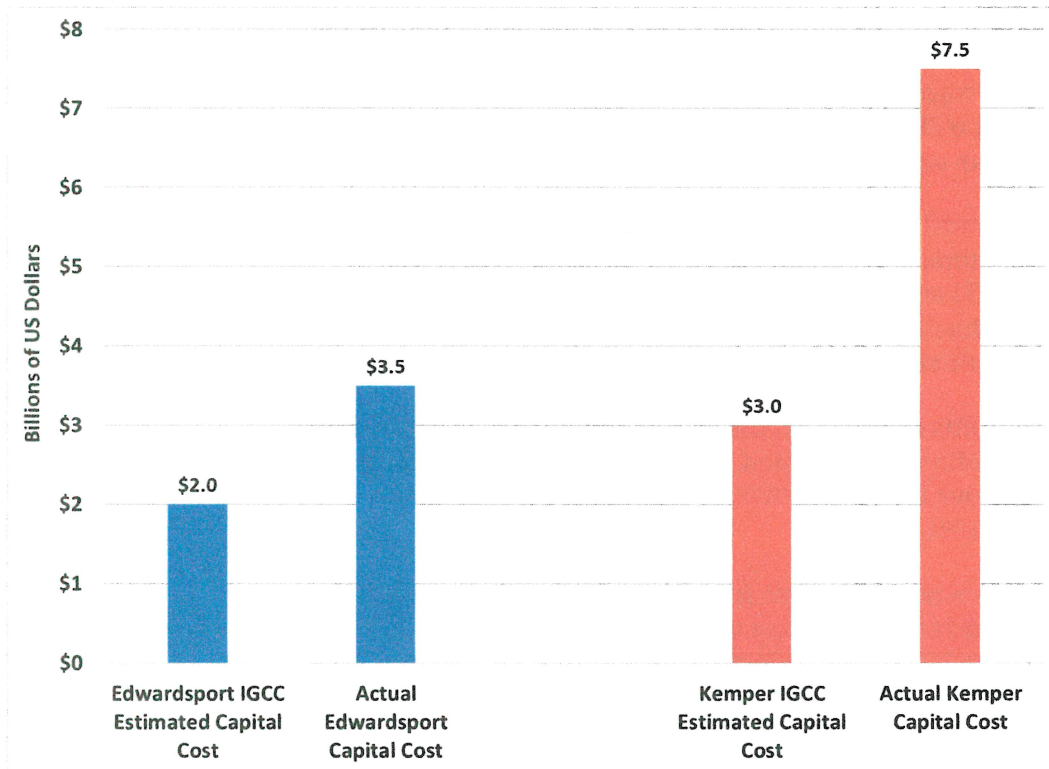
¹¹ E&E News. [Carbon Capture takes 'huge step' with first U.S. plant](#). January 10, 2017. Also: New York Times. [Can Carbon Capture Technology Prosper Under Trump](#). January 2, 2017.

¹² National Association of Regulatory Utility Commissioners (NARUC). [Carbon Capture, Utilization, and Storage: Technology and Policy Status and Opportunities](#). November 2018, p. 47.

¹³ *Ibid.*

actual capital costs of both the Edwardsport and the Kemper integrated gasification combined cycle plants were both substantially higher than the owners of either plant had estimated when they obtained permits from their states to undertake the projects. Both projects involved the scaling-up of smaller test facilities to commercial-scale power plants.

Figure 2: Actual vs. Estimated Costs of Edwardsport and Kemper IGCC Plants



The construction of first-of-a-kind, commercial-scale nuclear plants with new technologies also has run into significant cost overruns. For example, the estimated capital cost of Georgia Power Company's 45% share of the Vogtle 3&4 nuclear plants has more than doubled from about \$4.5 billion to more than \$9.6 billion, and the project remains a year or more from completion.¹⁴

For these reasons, the \$1 billion low end of Minnkota's estimated range of capital costs does not appear to be realistic. Even the \$1.3 billion midpoint and \$1.6 billion estimates are extremely optimistic. The actual cost of retrofitting Young Unit 2 for CO₂ capture could easily exceed the \$1.6 billion high end of Minnkota's range.

¹⁴ Georgia Public Service Commission. [Document Filing #180800](#). April 20, 2020.

Risk No. 2: Uncertainty About How Much CO₂ Will Be Captured by Project Tundra

The federal 45Q tax credit program is straightforward: The more CO₂ produced and then either stored or reused via EOR, the more money earned. In other words, the total number of credits that a company earns is a function of how much CO₂ it produces and how much of the CO₂ it produces is captured. The program currently allows a plant owner to earn tax credits for the first 12 years after the retrofit goes into service.

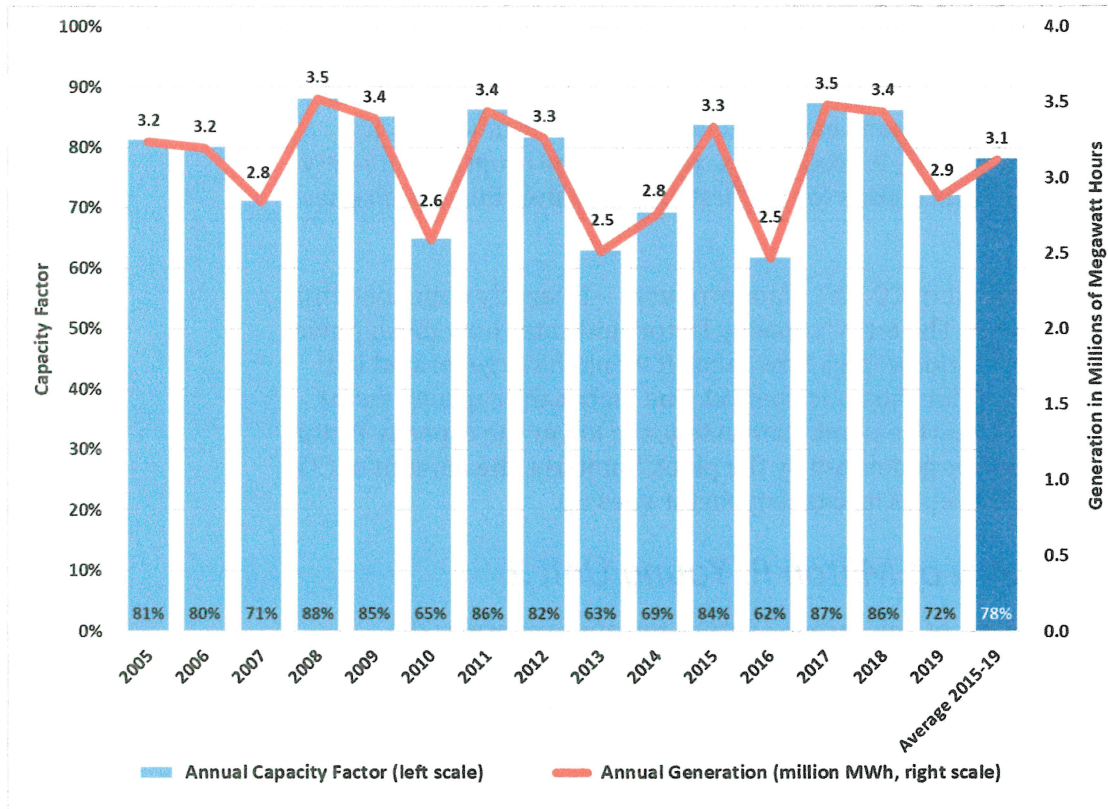
The first variable—the amount of CO₂ the plant produces—is largely dependent on how much the plant operates. The term “capacity factor” indicates how much power a plant produces in a given period versus how much it would have generated if it had operated at 100% power for the entire period. The higher the capacity factor, the more power is generated by the plant. Conversely, the lower the capacity factor, the lower the amount of power generated by the plant. Similarly, the amount of CO₂ produced by a coal plant goes up as its capacity factor goes up.

The Operating History of Milton R. Young Unit 2

The first key to the economics of any carbon capture retrofit proposal is the assumption for the retrofitted unit’s annual capacity factor following after the project’s start-up, particularly for the first 12 years when the tax credits are available.

Young Unit 2’s annual generation and capacity factors have varied significantly since 2005, with an annual average generation of 3.12 million megawatt-hours (MWh) between 2015 and 2019. This meant that the unit achieved an average 78% capacity factor during the five-year period.

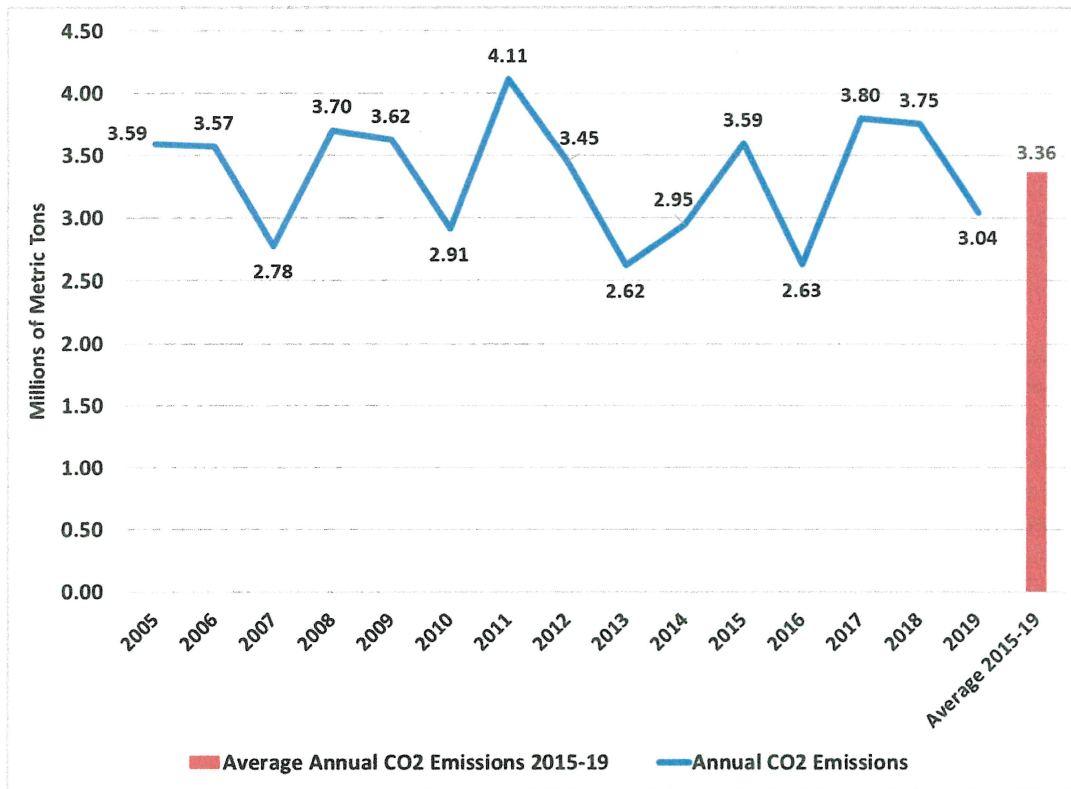
Figure 3: Milton R. Young Unit 2 Annual Capacity Factors in the Years 2005-2019



Source: EIA Form 923, S&P Global Market Intelligence.

Unit 2’s annual CO₂ emissions fluctuated, along with its annual generation. The unit has emitted an average of 3.36 million metric tons of CO₂ annually since 2015.

Figure 4: Milton R. Young Unit 2 Annual CO₂ Emissions, 2005-19



Source: EPA Continuous Emissions Monitoring Systems data, S&P Global Market Intelligence.

However, a number of factors suggest that Young Unit 2’s annual generation (and annual CO₂ emissions) will fall in the years ahead.

Problems Associated With Operating a First-of-a-Kind Project

As noted earlier, the Fluor carbon technology that Minnkota proposes to use at Young Unit 2 has not been operated at commercial scale. Consequently, if Young Unit 2 ultimately is retrofitted with this technology, it will be a first-of-a-kind at commercial-scale project. Industry experience shows that power plants with new and untested at commercial-scale technologies typically have unanticipated operating problems during their initial years of operation, if not longer.

Minnkota’s retrofit of Young Unit 2 would be almost twice the size of Petra Nova and four times the size of Boundary Dam 3. As the industry has learned through painful experience, serious and expensive problems can occur when scaling up new technologies.

For example, the Edwardsport IGCC plant has experienced a series of significant operational problems since it entered commercial service in June 2013. As a result, Edwardsport’s actual capacity factor on gasified coal (also called syngas) through May 2020 was 48%, dramatically lower than the approximate 80% percent capacity factor on syngas that had been predicted by Duke Energy Indiana for the plant’s first

seven years of operations when it was seeking a permit to build the plant.¹⁵ Edwardsport's capacity factor on all fuels (natural gas plus gasified coal) through May 2020 was only 60%.¹⁶

Similarly, Southern Company promoted the use of its TRIG (transport integrated gasification) technology to gasify coal at the Kemper IGCC plant. However, severe problems occurred with the plant's scaled-up gasification technology during pre-operational testing. As a result, the plan to burn gasified coal was scrapped and Kemper (since renamed Plant Ratcliffe) now is the world's most expensive natural gas-fired combined cycle power plant.

Until recently, Petra Nova's owners had not released any information about its operating performance and the reasons for its failure to capture as much CO₂ as planned. However, a March 2020 report by NRG, owner of 50% of Petra Nova, revealed that the project had experienced significant performance problems during its first three years of operations, from January 2017 to December 2019. Data provided in this report shows that Petra Nova's actual capacity factor for the three-year period was just 66%, substantially below NRG's 85% target performance.¹⁷ The project's capacity factor this year, and perhaps in coming years, will be even lower, as it was indefinitely mothballed on May 1 due to low oil prices.

Boundary Dam 3 also has captured much less CO₂ than its owner, SaskPower, predicted when the plant was retrofitted for carbon capture. For example, SaskPower has said that the carbon capture facility at the plant worked only about 40% of the time in much of 2014 and 2015 with the facility being shut down for a nearly two-month maintenance outage in the fall of 2015.¹⁸ The facility also was shut down for 96 days in 2017 to complete projects designed to improve operational performance and reliability.¹⁹ In fact, Boundary Dam had actually captured CO₂ at its maximum daily rate of 3,200 tonnes for just three days in its first 40 months after being retrofitted for carbon capture. Although Boundary Dam 3's performance has improved in recent years, it is still nowhere near the expected level.

The Impact of Plant Aging

Young Unit 2 began commercial operation in April 1977; the unit will be 48 years old by the time the retrofit is scheduled to enter commercial service at the end of 2025. By 2037 (the end of the 12-year eligibility period for the 45Q tax credits), the plant will be more than 60 years old.

This is important because older plants, on average, tend to cost more to operate and maintain and are less reliable, according to analyses by the U.S. Department of

¹⁵ Data from EIA Form 923 and Monthly Reports to the Indiana Utility Regulatory Commission.

¹⁶ Edwardsport's capacity factors in recent years have been a bit better. Its capacity factor on syngas since January 2016 has been slightly above 50% while its capacity factor on all fuels (natural gas + syngas) has been 70%.

¹⁷ U.S. Department of Energy. [W.A. Parish Post-Combustion CO₂ Capture and Sequestration Demonstration Project Final Technical Report](#). March 31, 2020, p. 41.

¹⁸ *SaskPower's 2015-2016 Annual Report*, p. 59.

¹⁹ *SaskPower's 2017-2018 Annual Report*, p. 36.

Energy's Argonne National Laboratory and the National Energy Technology Laboratory, which have found that coal plant heat rates increase with plant age, while plant availability declines.²⁰ Heat rate is a measure of a power plant's efficiency in generating electricity; a higher heat rate means that a plant is less efficient. And, in general, power plants tend to become less efficient as they age. Plant availability measures the percentage of operating hours in which a plant was actually available to generate power. Plants also tend to become less available to generate power as they age, in part because they have more unanticipated problems and unplanned outages.

90% Carbon Capture Has Not Been Proven Over an Extended Number of Years

Proponents of carbon capture, including Minnkota, claim without any supporting operational evidence that the technology has been proven and that proposed projects will be able to capture 90% of a plant's CO₂ emissions day in and day out over a 12-year period.²¹ These claims bear little relationship to the performance to date at Petra Nova and Boundary Dam, the only two coal-fired carbon capture power plants in the world.

Petra Nova

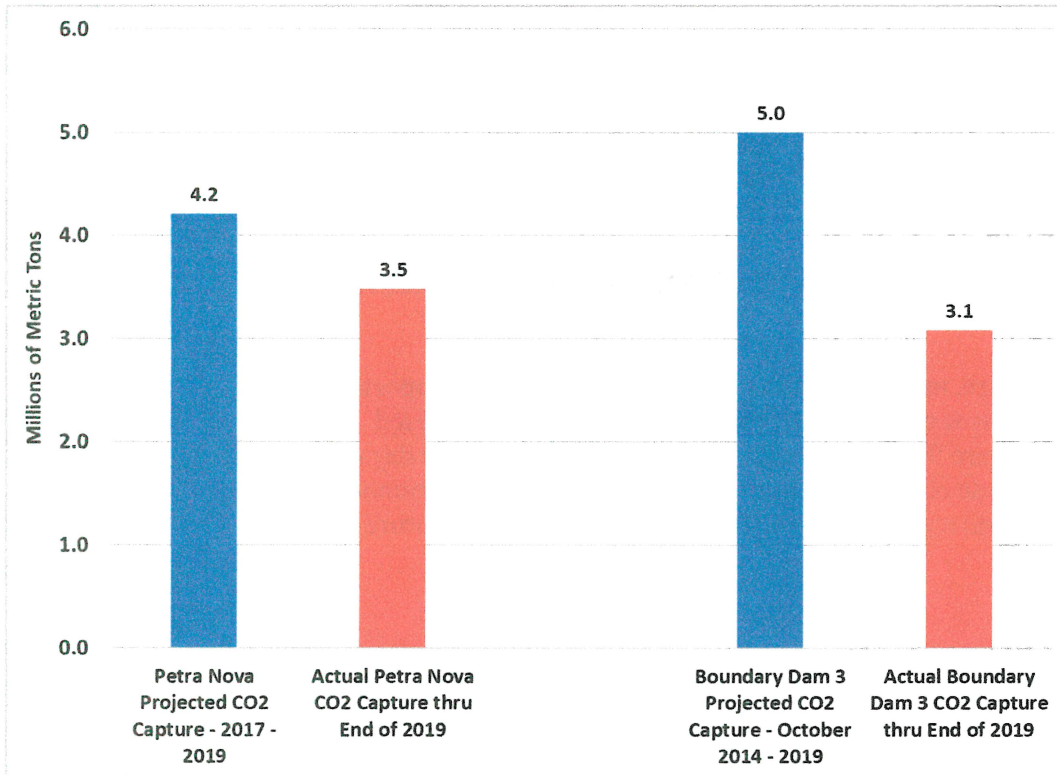
Petra Nova was originally designed to capture "at least 90% of the CO₂ from the flue gas in a 240MW slipstream from Parish Unit 8. Put another way, Petra Nova was expected to capture an average of 1.4 million metric tons (1.54 million short U.S. tons) each year, on average, or about 33% of the total annual emissions from Unit 8.²² Boundary Dam 3 captures the CO₂ from a 110MW plant. SaskPower projected that the plant would capture 1 million metric tons each year. However, both plants failed to achieve these goals, in large part because of operating problems referenced earlier.

²⁰ U.S. Department of Energy. [Staff Report to the Secretary on Electricity Markets and Reliability](#). August 2017, p. 155.

²¹ For example, the Los Alamos National Laboratory [Preliminary Assessment of Post-combustion Capture of Carbon Dioxide At The San Juan Generating Station](#) simply observed that Petra Nova has stated publicly that the facility achieves 90% capture of the processed fuel gas without seeing any actual operational data supporting this claim. December 2019, pp. 9-11.

²² U.S. Department of Energy. [W.A. Parish Post-Combustion CO₂ Capture and Sequestration Project, Final Public Design Report](#). February 17, 2017. Also: EIA. [Petra Nova is one of two carbon capture and sequestration power plants in the world](#). October 31, 2017. Also: U.S. Department of Energy. [W.A. Parish Post-Combustion CO₂ Capture and Sequestration Project Summary](#). September 2012.

Figure 5: Actual vs. Target Amounts of CO₂ Captured at Petra Nova and Boundary Dam 3



Sources: NRG Inc. and SaskPower BD3 Status Updates.

Petra Nova captured 662,000 fewer metric tons of CO₂ during its first three years of operation than projected—despite the fact that Parish Unit 8 actually generated more power and, almost certainly produced more CO₂, than in previous years.²³ And Boundary Dam 3 didn't achieve its goal of capturing 3 million metric tons of CO₂ until early November 2019, after the project had been in operation for five years or two years later than forecasted.

Based on information in NRG's March 2020 Petra Nova report to the Department of Energy, it is clear that the project's actual CO₂ capture rate was in the range of 75% to 83%, not 90% (although it probably did achieve 90% capture on an intermittent basis).²⁴ But that does not establish that carbon capture has been "proven" or "demonstrated" over the long term.

This 75% to 83% range for Petra Nova's capture rate also does not reflect the CO₂ emissions from the combustion turbine that provides the power needed to run the

²³ Parish Unit 8's annual capacity factor rose from 68% in the two years prior to the start of operations at Petra Nova to 72% in the three-year period 2017-2019 after Petra Nova began capturing CO₂.

²⁴ U.S. Department of Energy. [Petra Nova Post-Combustion CO₂ Capture and Sequestration Demonstration Project, Final Scientific/Technical Report](#). March 31, 2020, p. 47.

project's carbon capture systems. When those are included, Petra Nova's net CO₂ capture rate drops to somewhere in the range of 70% or lower.

Data published by SaskPower suggests that Boundary Dam 3's average capture rate in the five-year-plus period between October 2014 and December 2019 fell somewhere around 55% to 60%.²⁵

Risk No. 3: Whether Minnkota Will Be Able To Finance Project Tundra Entirely With Federal 45Q Tax Credits

The presumption in Minnkota's discussions surrounding the proposed carbon capture retrofit of Young Unit 2 is that, in essence, it will be cost-free to the ratepayers of its member-owner cooperatives. The basis behind this presumption is that recently expanded 45Q tax credits will cover the project costs. IEEFA believes this is far from the case, and believes ratepayers and customers will end up paying for significant portions of the project's overall cost.

The theory behind tax equity financing is straightforward: A party with access to a tax credit agrees to sell it to another party to pay for the asset that generated the credit in the first place. As the Congressional Research Service phrased it in a recent report:

*"The term tax equity investment describes transactions that pair the tax credits or other tax benefits generated by a qualifying physical investment with the capital financing associated with that investment. These transactions involve one party agreeing to assign the rights to claim the tax credits to another party in exchange for an equity investment (i.e., cash financing)."*²⁶

So in other words, Minnkota is planning to sell the tax credits from capturing carbon at Young Unit 2 and then store it underground or sell it for EOR activities to an investor who can use the credits as they are earned over the next 12 years or longer. In return, the investor provides upfront funding for Minnkota to pay for the project's construction.

It sounds simple, but there are other factors to consider. For starters, a dollar today is worth more than one earned next year or in the future, so the future tax credits will be discounted. In addition, there is a limited pool of tax equity financing, and developers of newer or less-conventional technologies (such as Minnkota's first-of-a-kind project) will have to pay a risk premium compared to developers of more commercially common projects backed by wind and solar developers.

David Posner explained this part of the puzzle in testimony to the New Mexico

²⁵ [SaskPower BD3 Status Update](#). December 2019.

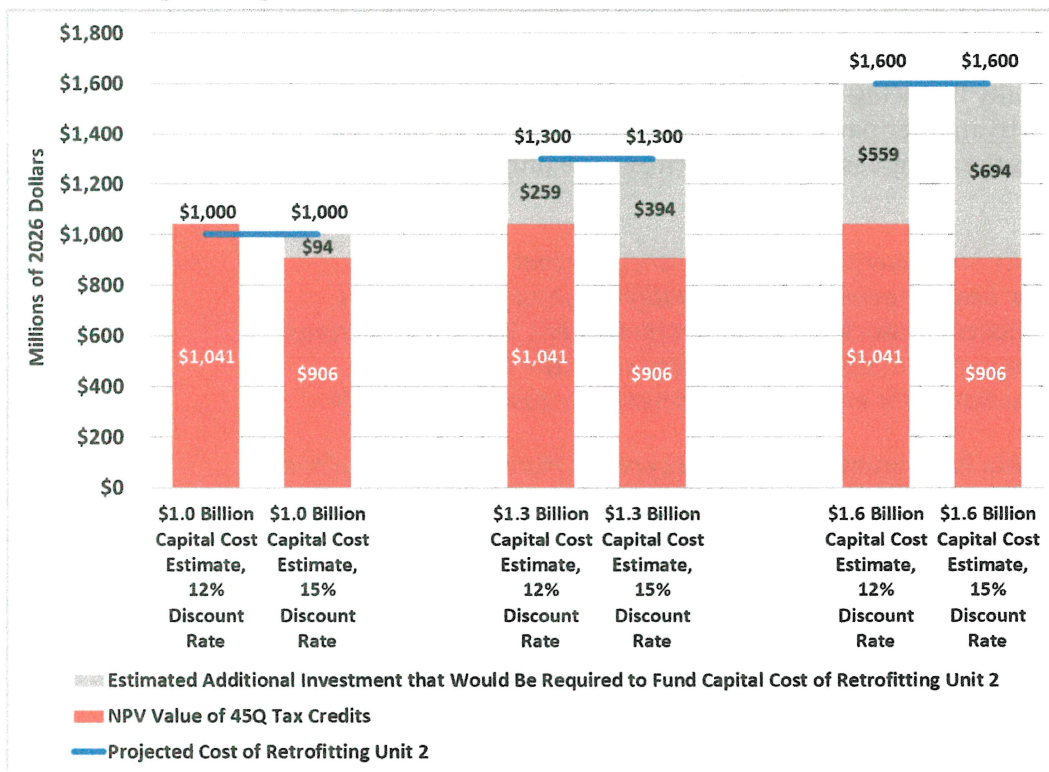
²⁶ Congressional Research Service. [Tax Equity Financing: An Introduction and Policy Considerations](#). April 17, 2019, p. 1.

Public Regulation Commission:

“Finally, it is worth noting that tax equity supply is limited and tends to seek the safest investment available ... With wind and solar deals still offering tax credits for projects that will enter service until the statutory deadline for 45Q projects to begin construction, solar deals offering tax credits after that deadline, and both wind and solar projects offering significant accelerated depreciation benefits before and after that deadline, it is likely that tax equity investors will completely shun highly risky CCS projects and choose to limit investments to mature and reliable renewable projects.”²⁷

This means the funding available to Minnkota for the project will be discounted, with the net present value significantly below any realistic estimate of the project’s actual cost, as can be seen in Figure 6 below.

Figure 6: Expected Value of 45Q Tax Credits vs. Projected Cost of Retrofitting Young Unit 2



Source: IEEFA analysis.

As shown, the 45Q tax credits that can be expected by capturing and sequestering or using the CO₂ from Young Unit 2 would only fully cover the entire cost of retrofitting the unit in the unlikely circumstance that the capital cost of the retrofit is just \$1 billion and the co-op’s partners or investors only apply a 12% discount rate in their

²⁷ New Mexico Public Regulation Commission. [Prepared Rebuttal Testimony of David B. Posner on Behalf of Sierra Club](#). November 15, 2019, pp. 3-4.

evaluation of the risk of investing in the project. Even then, there is no reason to expect that the 45Q credits would cover shortfalls in the unit's operating and maintenance costs.

A more realistic estimate is that the net present value of the tax credits at the Young retrofit is likely somewhere between 57% and 80% of the project's costs. Under these circumstances, some other party—Square Butte, Minnkota, the 11 member cooperatives that are its owners, or another partner or investor—would have to come up with the additional money needed to complete and run the project. This would raise the cost of the electricity for the consumers of the power from Young Unit 2 in North Dakota and Minnesota.

The analysis shown in Figure 6 is premised on a set of what we believe are conservative assumptions:

1. The capital cost of any retrofit would fall within the \$1 billion to \$1.6 billion range identified by Minnkota.
2. After being retrofitted, Young Unit 2 would operate at the same capacity factor and produce the same amount of CO₂ as it has averaged between 2015 and 2019. In other words, the operating performance of the unit would not decline at any point before 2038. This is clearly an optimistic assumption, given that the unit already is 43 years old.
3. Young Unit 2 would capture 90% of the CO₂ it produces in each year between 2026 and 2037.
4. All the CO₂ captured at Young Unit 2 is assumed to be either (a) sequestered and, therefore, eligible for the \$50 per metric ton tax credit (escalated by the rate of inflation starting in 2027) or (b) sold for enhanced oil recovery at a price of \$15 per metric ton, in addition to being eligible for a tax credit of \$35 per metric ton.
5. Young Unit 2 would operate for the entire 12-year period after it has been retrofitted.

In addition, we have assumed discount rates of 12% and 15%. This is necessary and appropriate, as Mr. Posner has explained:

"When a tax equity investor invests in a project, it offers up-front cash for the project in exchange for access to the future tax credits. Because there is risk that the credits may not materialize and because investors require a return on their investment that will be recovered over time, tax equity providers "discount" the nominal value of projected tax credits. If a project's future tax credit cash flows are seen to be riskier – say, because of an unproven technology, an unclear regulatory regime, or operational assumptions that are aggressive-investors will apply a higher rate. When a tax equity investor increases the discount rate on the projected stream of tax credits, this lowers

the value of the tax credits to the project developer.”²⁸

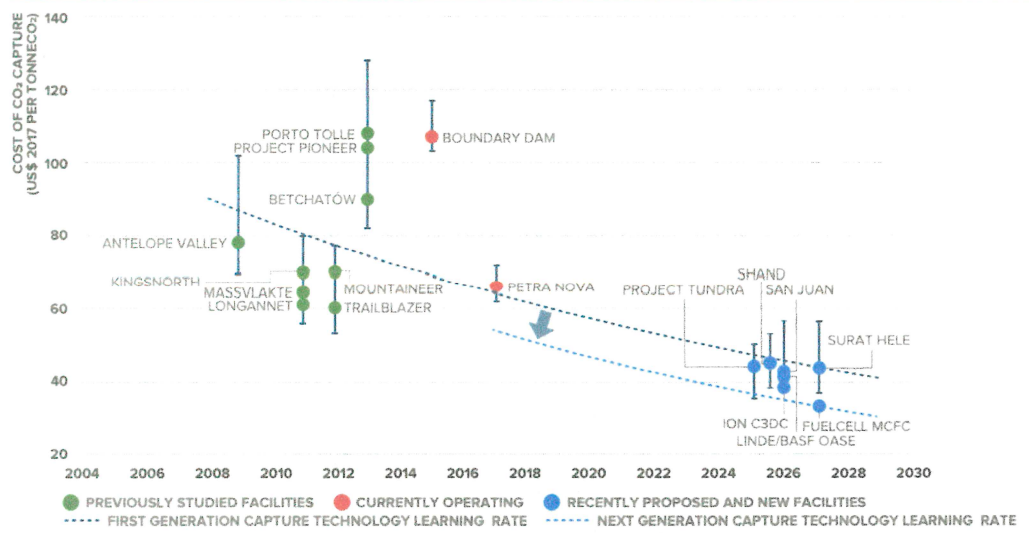
Obviously, there would be an even larger financing shortfall than shown in Figure 6 if (a) the capital cost of the retrofit is above \$1.6 billion; (b) Young Unit 2’s operating performance declines, and it therefore produces less CO₂; (c) Project Tundra fails to capture 90% of the CO₂ in one or more years; or (d) the unit is retired before the end of 12 years.

Risk No. 4: Uncertainty Regarding the Cost of Capturing the CO₂ Produced by Young Unit 2

Although no evidence has been made public as to the actual cost of capturing CO₂ at either Boundary Dam 3 or Petra Nova, the U.S. Department of Energy and other proponents of CCS have reported that the current cost of capturing CO₂ from coal plants is in the range of \$60 to \$65 per metric ton.²⁹ It also has been acknowledged that this cost is far too high and must be reduced to about \$30 per metric ton by 2030 for carbon capture to be financially viable.³⁰

Proponents of carbon capture use a chart from the Global CCS Institute’s *2019 Global CCS Status Report* to show that there are declining costs associated with carbon capture technology maturation based on “industry reports that show a downward trend in coal technology costs.” This chart is reproduced below as Figure 7.

Figure 7: Misleading Claim of Downward Trend in Carbon Capture Costs



Source: *Global CCS Institute’s 2019 Global CCS Status Report, Figure 8.*

²⁸ *Ibid.*, pp. 7-8.

²⁹ S&P Global. [US DOE wants to cut carbon capture costs 50%, official touts CO₂ already stored.](#) June 11, 2020. Also: IEA. [Carbon Capture Utilisation and Storage – Status Barriers and Potential, CCC/304.](#) July 28, 2020.

³⁰ *Ibid.*

Unfortunately, this figure is misleading in several ways and paints a false picture of carbon capture costs.

First, the only two potentially accurate capture costs shown in Figure 7 are the \$60 to \$65 cost for Petra Nova and the \$100-plus cost for Boundary Dam. We say “potentially actual” because no actual operating costs have been released for Petra Nova or Boundary Dam 3. All the other carbon capture costs shown in the figure are merely estimates either for past projects that have not been built or for future projects that have not been built yet and may never be built.

Consequently, Figure 7 really only shows that proponents of future carbon capture projects are forecasting or assuming that the cost of capturing CO₂ at their projects will be lower than what they think Boundary Dam and Petra Nova have cost. But there is no real, hard construction and operating cost experience to back up their assumptions and, as such, there is no declining trend in the cost of carbon capture, as Figure 7 misleadingly implies.

Second, the range of costs shown for the various projects in Figure 7 are levelized costs of capturing carbon that in all, or at best, nearly all cases also are merely based on estimates and do not represent actual operating cost data.

Third, the levelized costs shown in Figure 7 assume that each project achieves an 85% capacity factor. In reality, Petra Nova has only achieved an average 66% to 72% capacity factor at most since it began commercial operations in January 2017. There has been no public information that we have seen on the actual operating performance of Boundary Dam Unit 3 since it was retrofitted for carbon capture but it is clear from monthly operating reports published by SaskPower that it has not come close to an 85% capacity factor. Consequently, the actual levelized cost of carbon capture at both facilities is likely higher (and probably significantly higher) than this figure suggests.

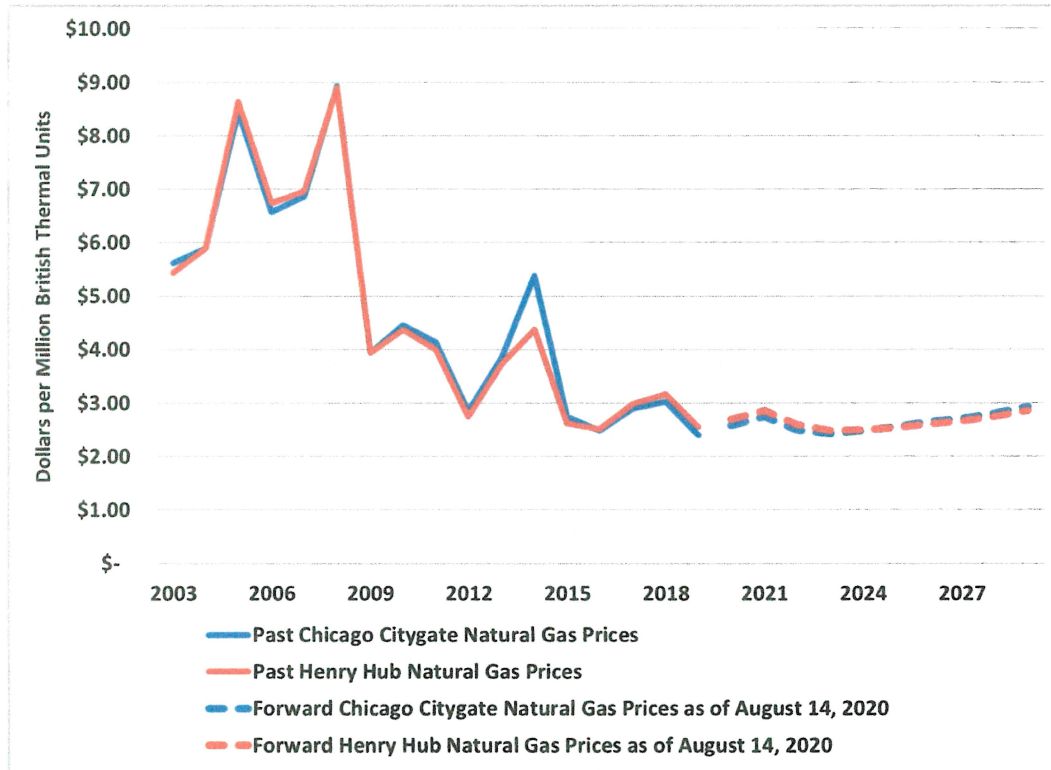
Risk No. 5: Young Unit 2 Already Is a High-Cost Generator and Can Be Expected To Be Even More Expensive If Retrofitted for Carbon Capture

U.S. coal plants have become increasingly uneconomic over the past 10 years due to changing market forces including low natural gas and energy market prices, and growing competition from declining cost renewable resources and storage—wind, in the case of the Midcontinent Independent System Operator (MISO) market where Young Unit 2 is located.

Natural Gas Prices

Gas prices at U.S. trading hubs, including those in the MISO service territory, have declined significantly since 2008 and are expected to remain low for the foreseeable future, as can be seen in Figure 8.

Figure 8: Past and Market Expectations for Future U.S. Natural Gas Prices



Sources: S&P Global Market Intelligence, OTC Global Holdings.³¹

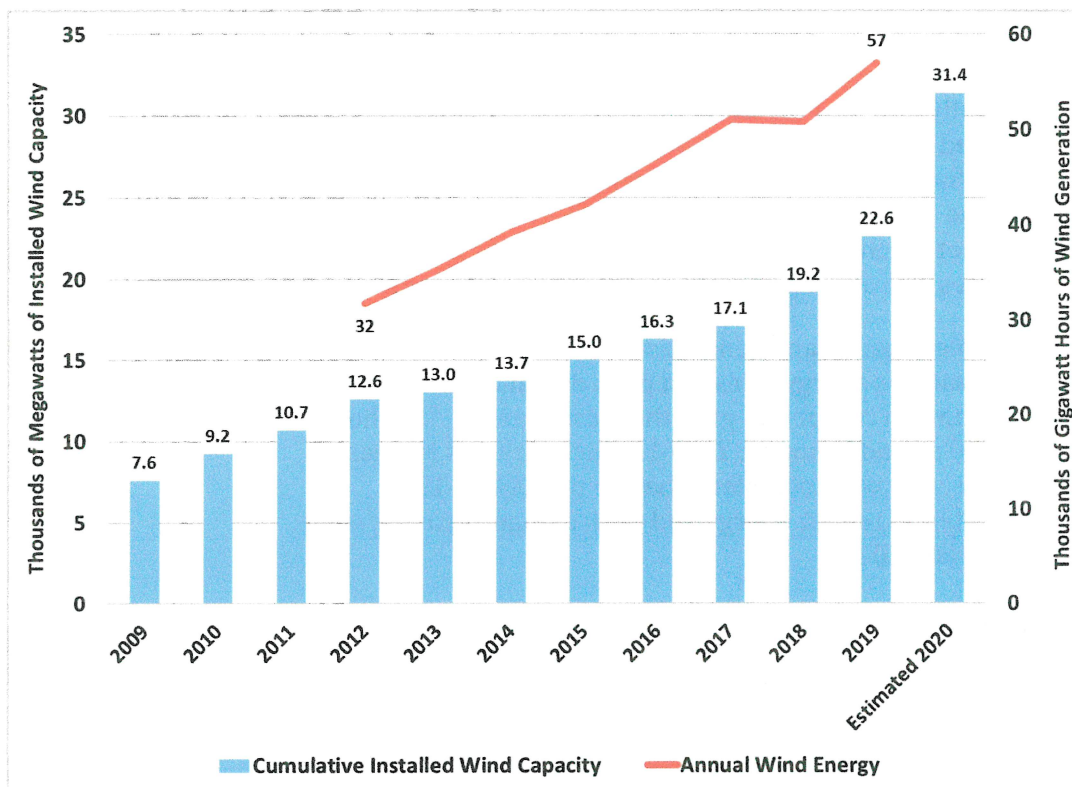
Persistently low prices will undermine the financial viability of the proposed Young Unit 2 carbon capture retrofit by reducing fuel costs for competing gas-fired plants in the region. This, in turn, will lead to (a) lower energy market prices and (b) increased generation at gas-fired plants, displacing generation otherwise produced at coal plants and lowering their capacity factors.

Growing Competition from Wind and Solar Resources and Storage

Installed wind capacity and generation in MISO have increased dramatically in the past decade. Installed wind capacity increased 145% between 2010 and 2019, with another giant leap expected in 2020. Wind generation nearly tripled between 2010 and 2019, with additional significant growth expected in coming years, further increasing the competition for Young Unit 2.

³¹ The forward prices in Figure 6 represent the market’s view of future gas prices. Past Natural Gas Prices downloaded from S&P Global Market Intelligence on January 24, 2020. Forward prices from OTC Global Holdings, also downloaded from S&P Global Market Intelligence on August 15, 2020.

Figure 9: Rapid Growth in the Past Decade in Installed Wind Capacity and Annual Wind Generation in MISO



Sources: MISO Annual State of Market Reports and Monthly Market Operations Reports.³²

Installed solar capacity in MISO more than doubled between December 2018 and March 2020, and solar generation increased by 70% between 2017 and the 12 months ending in March 2020.³³

As the amount of installed renewable generation has climbed, the prices of buying power from wind and solar resources have fallen.

Data from Lawrence Berkeley National Laboratory (LBNL) shows that the prices of wind power purchase agreements (PPAs) have fallen dramatically in all regions of the country. Prices for the best wind resources in the Interior region (including those in the Dakotas) averaged \$57/MWh in 2009; today, PPAs in those same areas are below \$20/MWh.³⁴ Wind prices in the rest of the country have fallen sharply as well, dropping from an average of roughly \$90/MWh in 2010 to less than \$30/MWh in 2018.

As wind prices have declined, the performance of wind turbines has improved,

³² MISO State of the Market Reports and MISO Monthly Operations Reports.

³³ MISO Monthly Operations Reports.

³⁴ U.S. Department of Energy. 2018 Wind Technologies Market Report. August 2019, p. 59.

driven in part by larger turbines mounted on taller towers and featuring longer blades.³⁵

The same trend of declining PPA prices is evident in the solar industry, with prices declining by more than 80%.³⁶ Current PPA prices are now commonly below \$50/MWh and often significantly less. In a review of 38 PPAs signed since 2017, LBNL found that 27 were priced below \$40/MWh, with 21 less than \$30/MWh and four under \$20/MWh (all levelized, in 2018 dollars).³⁷ Significantly, the LBNL survey also found that 23 of the PPAs included battery storage of four to five hours and that these projects were not much more expensive than the PPAs from solar-only projects.³⁸ Solar PPA prices also are expected to continue to decline over time.

At the same time that renewable capacity and generation in MISO have been growing, the 2019 MISO forecasts for energy sales and peak demand are relatively flat through 2039 (projecting annual compound growth of less than 1%).³⁹ The forecast was the same for MISO's Load Resource Zone 1, which includes Minnesota and North Dakota.⁴⁰ These forecasts were completed before the COVID-19 pandemic, which can be expected to reduce energy and peak demand growth, even from the low levels forecast in late 2019.

Energy Market Prices

Due to low natural gas prices and the increasing competition from declining cost renewable resources, energy market prices in the northern zone of MISO have been low for most of the past decade and are expected to remain low for the foreseeable future.

³⁵ Lawrence Berkeley National Laboratory. [Wind Technologies Market Report](#). August 2020.

³⁶ Lawrence Berkeley National Laboratory. [Utility-Scale Solar](#). December 2019. Prices cited here are levelized in 2018 U.S. dollars and include any contract escalation clauses.

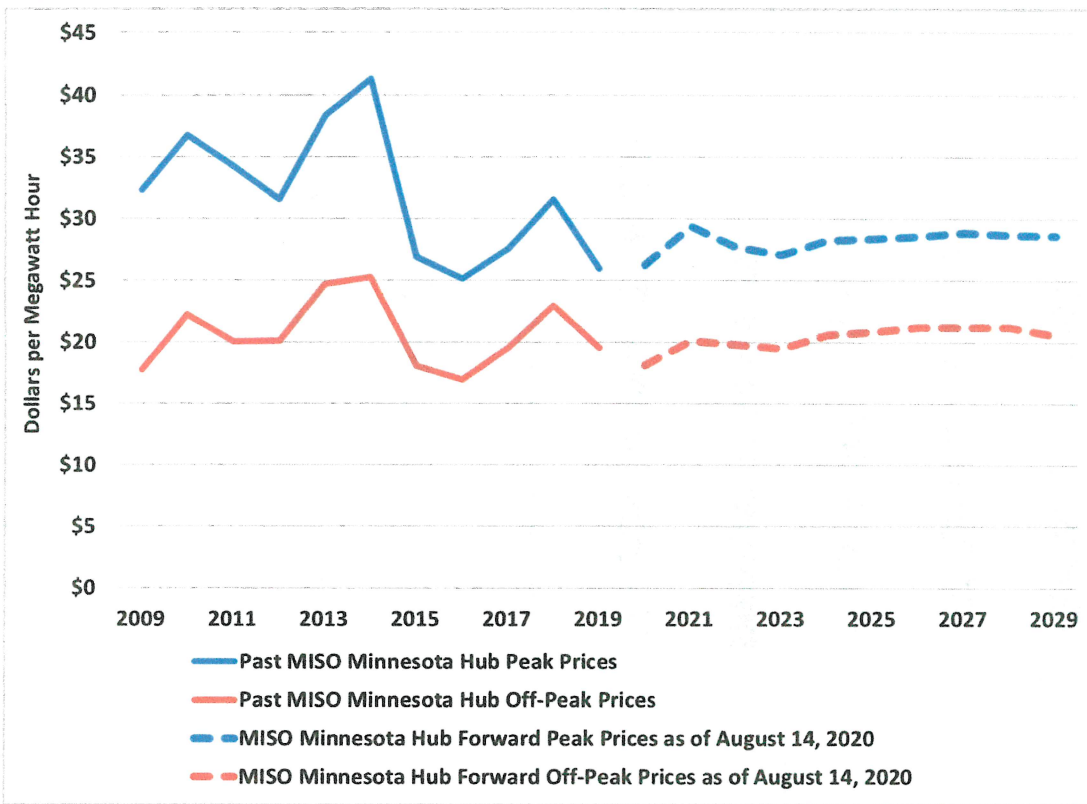
³⁷ *Ibid.*

³⁸ *Ibid.*

³⁹ State Utility Forecasting Group. [2019 MISO Energy and Peak Demand Forecasting for System Planning](#). November 2019, p. 2.

⁴⁰ *Ibid.*, pp. 27-28.

Figure 10: MISO Energy Market Prices

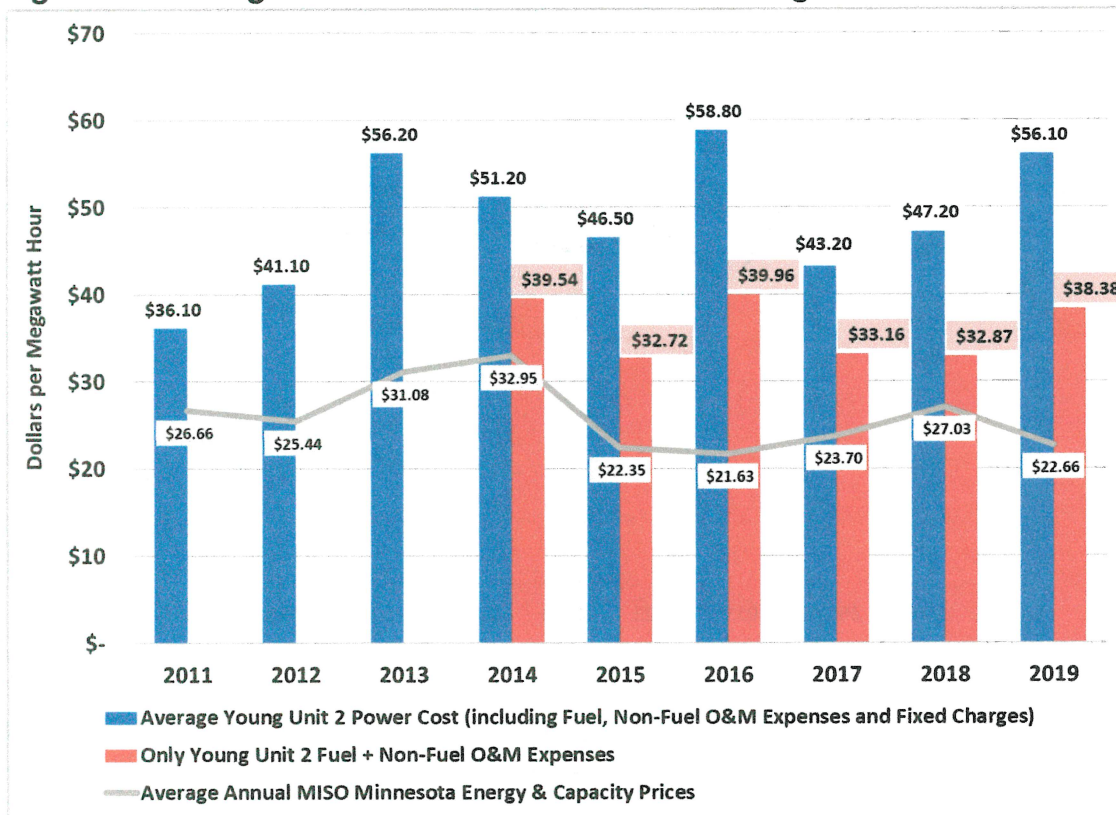


Sources: S&P Global Market Intelligence and OTC Global Holdings.

Although Minnkota has claimed that the Young Station “produces low-cost power for consumers in North Dakota and Minnesota,”⁴¹ this is clearly not true for Young Unit 2.

⁴¹ Project Tundra website.

Figure 11: The High Cost of Power from Milton R. Young Unit 2⁴²



Sources: Square Butte Annual Reports for 2015 through 2018.

As the figure clearly shows, Young Unit 2’s average cost of power since at least 2011 has been significantly higher than the costs of purchasing the same amounts of power from MISO. IEEFA estimates that between 2011 and 2019, ratepayers of Minnesota Power and the cooperatives that buy their power from Minnkota paid \$455 million more for power from Young Unit 2 than they would have paid for the same power from the MISO markets. Even ignoring Young Unit 2’s fixed charges, just the cost of producing power at the unit (only fuel plus non-fuel O&M expenses) was almost \$200 million higher than buying the same power in the market.

Yet, despite the much cheaper prices available in MISO, Minnkota has purchased only small amounts of power in the marketplace since 2015—averaging just 293,999 MWh, or 4.8% of its joint system energy requirements. Instead of saving its members money by purchasing cheaper MISO energy, Minnkota has preferred to generate more expensive power at its own coal plants, including Young Unit 2.

Minnkota has indicated its intention to continue purchasing only small amounts of the low-cost power available in the MISO market in coming years. Its 2019 IRP states that Minnkota’s joint system purchases from MISO will range from a low of

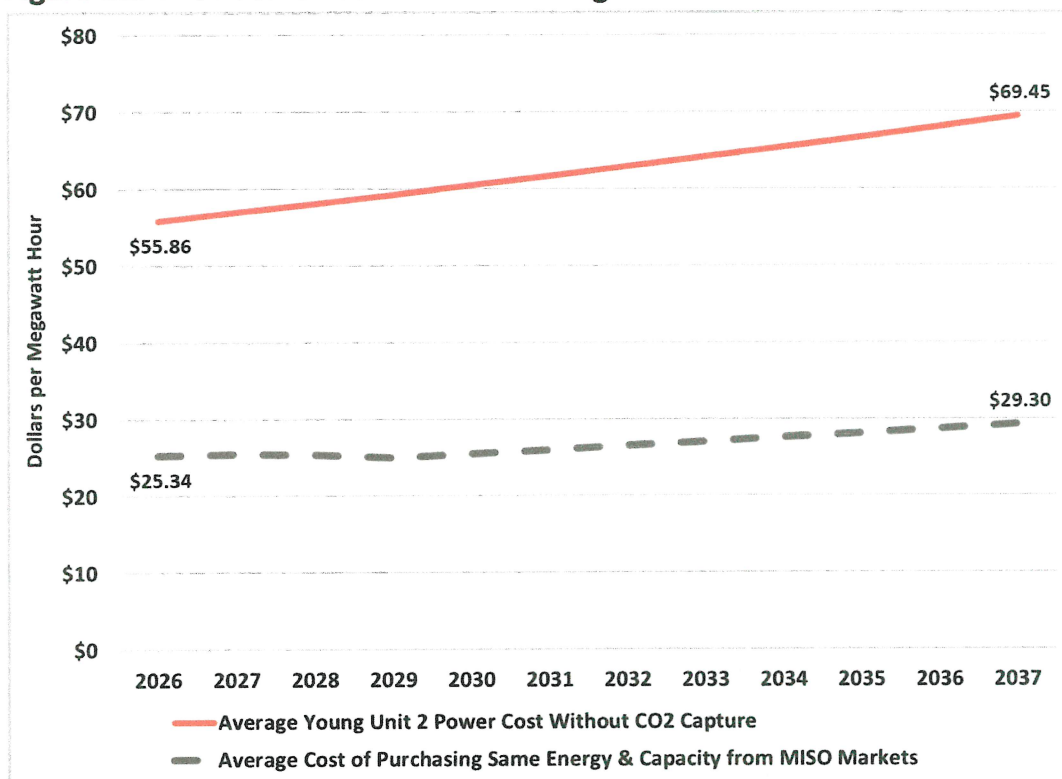
⁴² The average power costs in Figure 10 represent Unit 2’s annual fuel and non-fuel Operating & Maintenance expenses plus the fixed charges for the plant. These fixed charges include interest, depreciation and income taxes.

0.3% to a high of 2.4% of its total annual energy requirements—even less than Minnkota has been purchasing in recent years.

Power from Young Unit 2 Will Remain Very Expensive Regardless of Whether it is Retrofitted for Carbon Capture

Low prices for the foreseeable future in the MISO energy markets mean that even if it is not retrofitted for carbon capture, the cost of power from Young Unit 2 will remain substantially more expensive than purchasing the same energy and capacity from the marketplace.

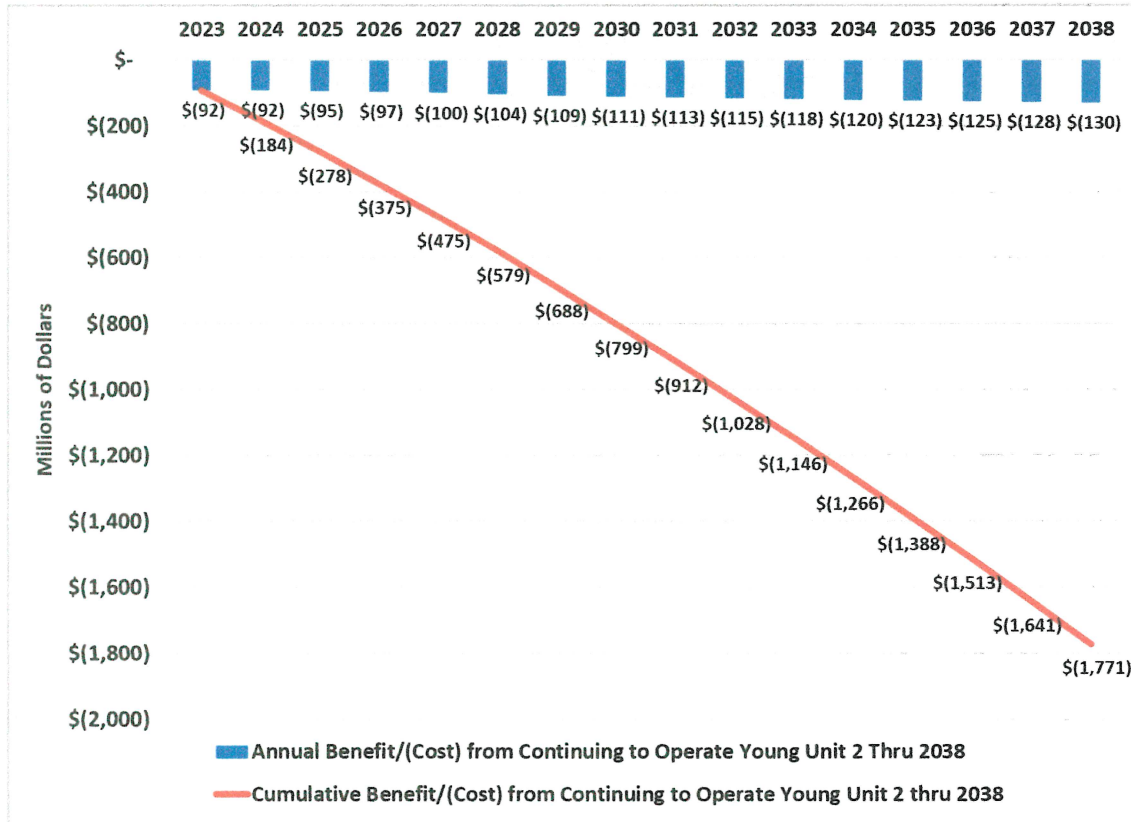
Figure 12: The Future Economics of Young Unit 2



Source: IEEFA analysis.

As a result, continuing to operate Young Unit 2 between 2023, when construction of the new carbon capture facility is projected to begin, and 2038 would cost the ratepayers of the co-ops that buy power from Minnkota \$1.77 billion more than if the co-ops purchased the same amounts of energy and capacity each year from the MISO competitive wholesale markets.

Figure 13: The Benefits/(Costs) of Continuing to Operate Milton R. Young Unit 2 vs. Buying the Same Amounts of Capacity and Energy from MISO



The analysis presented in Figures 12 and 13 reflects the following assumptions:

- Young Unit 2 would operate from 2026 to 2040 at the same annual average capacity factor as it achieved between 2015 and 2019. There is no assumption that the plant’s operating performance will degrade as it ages.
- The average power costs between 2026 and 2040 would be based on its average power cost for 2015 to 2019, escalated at a 2% annual rate starting in 2020.
- Energy market prices through 2029 are based on forward MISO price strips as of Aug. 14, and escalated at 5% annually in subsequent years.

The analysis does not reflect any of the construction or operating costs of the new carbon capture facility and associated infrastructure that could be passed along to Minnkota’s co-op owners and their ratepayers. It also does not include any of the potential costs of sequestering captured CO₂. However, the cost of operating and maintaining Young Unit 2 almost certainly will become even more expensive if it is retrofitted for carbon capture.

All fossil-fired power plants consume a portion of the power they generate to run necessary onsite equipment. For example, Young Unit 2 has averaged a parasitic load of about 8% of the unit's gross generation. The parasitic loads for a coal plant retrofitted for carbon capture are projected to be much higher, somewhere in the range of 25% to 35% of the unit's gross generation, in large part because a significant amount of steam from the power plant is used in the capture process.⁴³ Minnkota has indicated that "Project Tundra can result in ~ 300 MW net of near 'zero carbon' power for sale to our members with limited or no increase in cost."⁴⁴ Young Unit 2 is currently a net 455MW generator. So, it appears that Minnkota currently expects the unit's parasitic load will increase to about 35% of its gross generation.

The impact of Project Tundra on Minnkota's customers will depend on how they decide to charge for the electricity and steam used by the new carbon capture facility and associated infrastructure. If the answer is that the new facility will be treated as just another load on the system, then it should be charged for the same full production cost as other customers pay at an average dollar-per-MWh price that reflects all fuel, non-fuel O&M and fixed costs.

However, if Minnkota has a financial relationship with Project Tundra and the developer of the carbon capture facility and associated infrastructure, that would open the door to other costs for Minnkota, its owner co-ops, and their ratepayers. For example, to keep the cost of capture low Minnkota could decide to charge the carbon capture facility for only a portion of the fuel, non-fuel O&M and fixed costs it charges its co-op owners and their ratepayers. Or the carbon capture facility might not recover its full cost of capturing and sequestering CO₂ through EOR or sequestration. This might happen because those costs are higher than anticipated; the revenues from selling the captured CO₂ for EOR are lower than expected; or the retrofitted plant simply does not capture as much CO₂ as projected. Any of these would substantially affect the costs paid by Minnkota's owner cooperatives and their ratepayers.

In addition, if Project Tundra is considered a joint venture, Minnkota might be responsible for obtaining some of the additional funding necessary to build the new carbon capture facility and associated infrastructure if the estimated number of 45Q tax credits don't fully fund the project.

It also is possible that the Young Unit 2 retrofit would have an adverse impact on the plant's operating performance (e.g., result in a higher heat rate) or raise other plant costs, which would increase costs for ratepayers.

Moreover, depending on the financial relationship between Minnkota and the owner/investors in the new carbon capture facility and associated infrastructure, there would be additional costs after retrofitting that would be specifically related to the carbon capture process. Such costs would include additional operating,

⁴³ Enchant Energy. [San Juan Generating Station—Units 1&4, CO2 Capture Pre-Feasibility Study](#). July 8, 2019.

⁴⁴ Minnkota Power Cooperative. [In the Matter of Minnkota Power Cooperative, Inc.'s 2019 Resource Plan](#). June 28, 2019, p. 40.

maintenance and administrative staff; acquisition of more water; and higher water treatment, steam, chemical and disposal costs for the carbon capture facility. These costs would be passed along to ratepayers as well.

Finally, it is reasonable to expect significant capitalized maintenance expenditures will be required during the extended operating lives of any retrofitted coal units, for both the plant's carbon capture-related and its non-carbon capture-related equipment. Such expenditures most likely would be added to the company's rate base, forcing ratepayers to pay again.

It can be expected that these costs would fall in the range of millions to tens of millions of dollars, depending on the size of the coal unit retrofitted.

Unlike Minnkota, Other Utilities Are Transitioning Away from Coal Towards Proven Technologies

As early as 2013, Minnesota Power decided to phase out its contract to purchase 227 MW from Young Unit 2 by 2026 as part of a plan for meeting Minnesota's goals for greenhouse gas reductions.⁴⁵ The company reaffirmed this plan in its 2015 IRP, explaining that:

Minnesota Power has used imagination and innovation in rebalancing its generation fleet. Young 2, a major source of coal-based generation, is being phased out of the Company's resource mix as this coal generation is being replaced by wind energy.⁴⁶

and:

The Preferred Plan [which included phasing out Young Unit 2] continues the transition of Minnesota Power's fleet to be more diverse, flexible and lower emitting ... The Preferred Plan protects affordability, preserves reliability, and sustains environmental stewardship.⁴⁷

In early May, Great River Energy (GRE) announced that it was closing its Coal Creek Station in North Dakota, one of the largest coal plants in the Upper Midwest, and replacing it with 1,100 MW of new wind power.⁴⁸ GRE said its plan to phase out coal resources, add significant renewable energy and explore grid-scale battery storage would "significantly reduce [its] member-owners supply costs."⁴⁹

GRE Chief Executive Officer David Saggau said that the real driver for the decision to close Coal Creek in favor of wind and storage "is economics."⁵⁰ He also said after

⁴⁵ Minnesota Power. [2013 Resource Plan](#). March 1, 2013, p. 71.

⁴⁶ Minnesota Power. [2015 Integrated Resource Plan](#). September 1, 2015, p. 2.

⁴⁷ *Ibid*, p. 69.

⁴⁸ Great River Energy. [Major power supply changes to reduce costs to member-owner cooperatives](#). May 7, 2020.

⁴⁹ *Ibid*.

⁵⁰ Star Tribune. [Minnesota's Great River Energy closing coal plant, switching to two-thirds wind power](#). May 7, 2020.

Coal Creek is closed in the second half of 2022, GRE would voluntarily continue to make local tax payments for five years, totalling \$15 million.

Coal Creek is more than twice as large as Young Unit 2, slightly younger, and has been a better performer in recent years.

Market Uncertainties Cloud Outlook for Both EOR-Dependent Carbon Capture and Geologic Storage

The speculative economics associated with carbon capture projects at coal-fired power plants all depend on one key element—the ability to either sell the captured CO₂ to oil companies interested in using the gas for enhanced oil recovery projects or to permanently sequester the captured CO₂ underground.

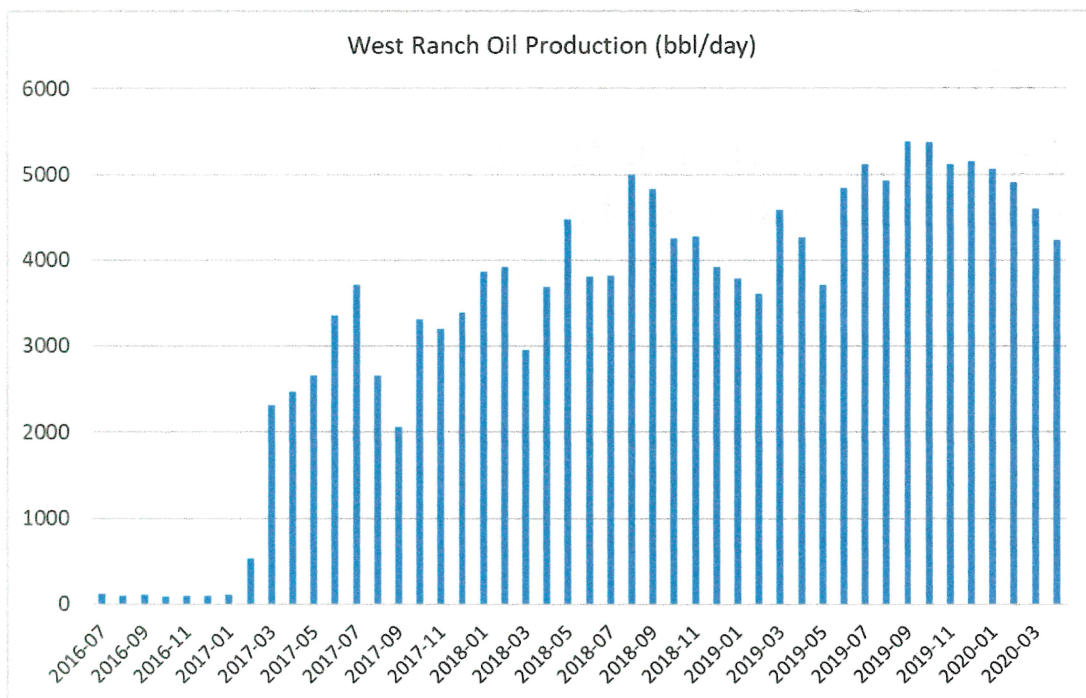
As outlined on its web site, Project Tundra's preferred option is to store captured CO₂ in a nearby underground geologic repository, but the possibility of using the CO₂ for EOR activities apparently has not been ruled out. Both options have serious drawbacks that could further undercut the project's tenuous economics.

The EOR Option

On July 28, 2020 NRG, the operator and 50% owner of Petra Nova, announced it had suspended the capture of CO₂ and mothballed the project due to low oil prices. NRG's announcement must represent a flashing warning sign for anyone considering retrofitting a coal plant for carbon capture or investing in such a project due to the significant market risks associated with using captured CO₂ for EOR.

NRG originally said the CO₂ captured at Petra Nova would be used to increase oil production at its West Ranch field to 15,000 barrels/day (b/d) from less than 1,000 b/d. However, as shown in the figure below, daily production from the beginning of 2017 through the first four months of 2020 has only rarely topped 5,000 b/d.

Figure 14: Actual vs. Estimated Daily Production at NRG's West Ranch Oil Field



Source: TexasDrilling.com.

Even before NRG's July 28th announcement, it was clear that the Petra Nova project has not been as profitable as NRG expected, if it has been profitable at all. Indeed, the company has taken impairments of almost all of its equity investment in its subsidiary Petra Nova Parish Holdings.

According to company financial reports, it invested \$300 million to bring the Petra Nova project online. However, in the past four years, NRG has recorded three separate impairment charges related to the plant and Petra Nova Parish Holdings, the subsidiary that operates the facility. These charges have totalled \$310 million.

The first charge, in 2016, before the project was even complete, was \$140 million. At the time, NRG cited declining oil prices as the reason for the impairment.⁵¹ NRG took a second impairment of \$69 million in its investment in Petra Nova in 2017 based on a revised view of oil production expectations.⁵² The last impairment, for \$101 million, was taken in 2019.⁵³

The profitability of retrofitting Young Unit 2 for carbon capture and using the captured CO₂ for EOR will be affected by actual and expected oil prices and by the competition among different CO₂ sources. Given the inherent volatility of oil prices

⁵¹ NRG Energy, Inc. [Form 10-K](#). February 28, 2017.

⁵² NRG Energy, Inc. [Form 10-K](#). March 1, 2018.

⁵³ NRG Energy Inc. [Form 10-K](#). February 27, 2020.

and current futures prices, the project may not be financially viable despite Minnkota's claims.

NRG hasn't just struggled to turn a profit with its EOR activities. The spring oil price crash and continuing uncertainty in the market have prompted significant cuts in planned capital spending by oil and gas companies across the sector, hitting particularly hard at two of the country's leading EOR companies, Occidental Petroleum and Denbury Resources.

Occidental, which has extensive EOR operations in the Permian Basin, saw its stock price drop from \$42.97 on Feb. 20 to \$12.51 on March 9. Its stock has traded in a narrow range since and closed Sept. 4 at \$12.25. The economic turmoil has also prompted the company to slash its dividend to just a penny per share. The company cut the dividend in late May after an earlier cut in March—the first in 30 years—to \$0.11 a share from \$0.79. It also has significantly reduced its capital spending plans for 2020.

Denbury Resources, which has CO₂ EOR projects in both the Gulf Coast and Rocky Mountains, has fared even worse, declaring bankruptcy in July in an effort to clear its books of \$2 billion in debt.

Any EOR activity also would require the construction of a pipeline to transport the CO₂ from the Young plant, which is located north of Bismarck in the center of the state, to the oil-rich Bakken fields 100 miles or more to the west.

The current uncertainty about EOR is not unique. For example, a November 2018 IEA report noted that there had been an 18 percent decline in oil production from North American EOR between 2014 and 2018.⁵⁴ The report pointed to several obstacles that have hindered EOR, pointing in particular to its cost disadvantage versus fracking. The current price crash only accentuates EOR's inability to compete with lower-cost producers.

Geologic Storage

The upheaval in the oil and gas sector may make geologic storage appear less risky, but there are plenty of potential pitfalls with this option as well.

In particular, without potential oil or CO₂ sales revenue, Project Tundra will be forced to finance its entire capital cost through the tax equity market. There, the project will have to compete for financing with more developed, less-risky sectors, notably wind and solar generation. These well-established renewable energy sectors are seen as low-risk and reliable performers, traits that would not be attributed to a large, first-of-its-kind underground carbon storage project. This would inevitably force Project Tundra's developers to pay more to raise capital for construction. Raising these funds in the next several years is likely to be even more difficult for untested CCS projects, given the overall slowdown in the U.S. economy.

⁵⁴ IEA. [Whatever happened to enhanced oil recovery?](#) November 28, 2018.

This will reduce the size of the overall tax equity market and could well prompt remaining participants to favor more established projects over CCS.

In addition, the rules governing long-term monitoring and verification of the stored CO₂ have yet to be finalized. The Treasury Department issued proposed rules in May that were generally well-received by officials associated with the CCS industry. Still, the issue remains unresolved and will certainly remain a major source of concern, especially given Treasury's admission that companies claimed almost \$894 million of credits for carbon capture and storage over the past 10 years without following Environmental Protection Agency oversight rules.

There also is no firm public data on the costs of compressing, transporting, injecting and monitoring the CO₂. Given the substantial costs for capturing the carbon in the first place, carbon sequestration-related costs need to be as low as possible to keep the project's overall costs in bounds. Unfortunately for Project Tundra and developers of other CO₂ sequestration projects, such costs may be higher than anticipated. In congressional testimony this summer, former Energy Secretary Ernest Moniz told the Senate Energy and Natural Resources Committee: "While the geologic capacity is available and the technology is known, there are economic and social challenges. The costs of drilling, compressing, injecting and monitoring are estimated to be in the range of \$20-\$25 per ton of CO₂."⁵⁵

If the costs are anywhere near that high, Project Tundra and similar sequestration-based CO₂ capture projects simply will have no chance of funding their initiatives via the \$50-per-ton tax credit, forcing additional costs onto ratepayers or the companies involved.

Conclusion

The Project Tundra proposal is a high-risk option that ignores past power plant experience with CCS technology and long-term trends in U.S. electricity markets that favor clean, cheap renewable energy and storage. In particular, IEEFA finds that:

- The project almost certainly will cost more—perhaps much more—than the unjustifiably optimistic estimates published by its backers;
- Problems are likely in the scale-up of Fluor's capture technology, which has never been used at commercial scale;
- It is highly unlikely the project will be able to consistently capture 90% of the carbon produced by the retrofitted Young unit, calling into question the economic underpinning of the entire project;
- Milton R. Young Unit 2 has been and will continue to be a high-cost generator; and

⁵⁵ Energy Futures Initiative. [Statement for the Record, Ernest J. Moniz, 13th Secretary of Energy, Before the Senate Energy and Natural Resources Committee](#). July 28, 2020, p. 8.

- Continued declines in price and improvements in performance by wind, solar and storage technologies will undercut electricity generation from the Young unit, reducing the amount of CO₂ it generates and consequently reducing potential income from the federal government's 45Q tax credits.

In sum, Project Tundra is a risk that the region's cooperative utilities and ratepayers simply cannot afford.

About IEEFA

The Institute for Energy Economics and Financial Analysis (IEEFA) examines issues related to energy markets, trends and policies. The Institute's mission is to accelerate the transition to a diverse, sustainable and profitable energy economy. www.ieefa.org

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David Schlissel, Director of Resource Planning Analysis for IEEFA, has been a regulatory attorney and consultant on electric utility rate and resource planning issues since 1974. He has testified as an expert witness before regulatory commissions in more than 35 states and before the U.S. Federal Energy Regulatory Commission and Nuclear Regulatory Commission. He also has testified in state and federal court proceedings concerning electric utilities. His clients have included regulatory commissions in Arkansas, Kansas, Arizona, New Mexico and California. He has also consulted for publicly owned utilities, state governments and attorneys general, state consumer advocates, city governments, and national and local environmental organizations. Schlissel has undergraduate and graduate engineering degrees from the Massachusetts Institute of Technology and Stanford University. He has a Juris Doctor degree from Stanford University School of Law.

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2021 SENATE STANDING COMMITTEE MINUTES

Appropriations Committee
Roughrider Room, State Capitol

HB 1452
4/9/2021
Senate Appropriations Committee

Relating to a clean sustainable energy authority and a clean sustainable energy fund.

Senator Holmberg opened the committee work 9:36 AM.

Senators present: **Holmberg, Krebsbach, Wanzek, Bekkedahl, Poolman, Erbele, Dever, Oehlke, Rust, Davison, Hogue, Sorvaag, Mathern, and Heckaman.**

Discussion Topics:

- Explanation of Mathern Amendment

Senator Mathern handed out amendment, and moved to adopt LC 21.0904.05005 - #11479.

Senator Heckaman second.

Senators		Senators	
<i>Senator Holmberg</i>	N	<i>Senator Hogue</i>	N
<i>Senator Krebsbach</i>	N	<i>Senator Oehlke</i>	N
<i>Senator Wanzek</i>	N	<i>Senator Poolman</i>	N
<i>Senator Bekkedahl</i>	N	<i>Senator Rust</i>	N
<i>Senator Davison</i>	N	<i>Senator Sorvaag</i>	N
<i>Senator Dever</i>	N	<i>Senator Heckaman</i>	Y
<i>Senator Erbele</i>	N	<i>Senator Mathern</i>	Y

Roll Call vote 2-12-0 Motion failed.

Senator Davison moved to take the money amount from \$40M to \$25M.

Senator Bekkedahl second.

<i>Senators</i>		<i>Senators</i>	
<i>Senator Holmberg</i>	Y	<i>Senator Hogue</i>	Y
<i>Senator Krebsbach</i>	Y	<i>Senator Oehlke</i>	Y
<i>Senator Wanzek</i>	Y	<i>Senator Poolman</i>	Y
<i>Senator Bekkedahl</i>	Y	<i>Senator Rust</i>	Y
<i>Senator Davison</i>	Y	<i>Senator Sorvaag</i>	Y
<i>Senator Dever</i>	Y	<i>Senator Heckaman</i>	Y
<i>Senator Erbele</i>	Y	<i>Senator Mathern</i>	Y

Roll Call vote 14-0-0. Motion passed.

Senator Davison moved Do Pass as Amended on HB 1452.
Senator Bekkedahl second.

<i>Senators</i>		<i>Senators</i>	
<i>Senator Holmberg</i>	Y	<i>Senator Hogue</i>	Y
<i>Senator Krebsbach</i>	Y	<i>Senator Oehlke</i>	Y
<i>Senator Wanzek</i>	Y	<i>Senator Poolman</i>	Y
<i>Senator Bekkedahl</i>	Y	<i>Senator Rust</i>	Y
<i>Senator Davison</i>	Y	<i>Senator Sorvaag</i>	Y
<i>Senator Dever</i>	Y	<i>Senator Heckaman</i>	Y
<i>Senator Erbele</i>	Y	<i>Senator Mathern</i>	N

Roll Call vote 13-1-0. Motion passed.

Senator Holmberg closed the committee work at 9:51 AM.

Rose Laning, Committee Clerk

April 7, 2021

PROPOSED AMENDMENTS TO REENGROSSED HOUSE BILL NO. 1452

In addition to the amendments adopted by the Senate as printed on pages 1004 through 1006 of the Senate Journal, Reengrossed House Bill No. 1452 is further amended as follows:

Page 1, line 23, after "gas" insert ", battery storage technologies"

Page 4, line 27, replace "Two members" with "One member"

Page 4, line 28, replace "Two members" with "One member"

Page 4, line 29, replace "Two members" with "One member"

Page 4, line 29, remove "and"

Page 4, line 30, after "association" insert ":

- f. One member representing the wind energy industry appointed by the governor;
- g. One member representing the solar energy industry appointed by the governor; and
- h. One member appointed by the North Dakota Indian affairs commission"

Page 6, line 1, replace "At the request of the authority" with "If a project exceeds one million dollars"

Page 6, line 3, after "shall" insert "conduct a cost-benefit analysis and"

Page 7, line 11 remove "To the extent the commission or authority determines the materials or data consist of"

Page 7, remove lines 12 through 17

Page 7, line 18, remove "2."

Page 7, after line 28 insert:

- "f. An estimate of the length of time the records must remain confidential to protect the project, not to exceed five years."

Page 7, line 29, replace "3." with "2."

Page 8, line 5, replace "4." with "3."

Renumber accordingly

STATEMENT OF PURPOSE OF AMENDMENT:

This amendment:

- Adds batteries to low-emission technology;
- Replaces 1 member appointed by the Lignite Research Council, 1 member appointed by the Oil and Gas Research Council, and 1 member appointed by the Renewable

Energy Council with 1 member representing the wind energy industry appointed by the Governor, 1 member representing the solar energy industry appointed by the Governor, and 1 member appointed by the Indian Affairs Commission as voting members on the Clean Sustainable Energy Authority;

- Requires a cost-benefit analysis for projects; and
- Limits the confidentiality of records submitted to the Industrial Commission or Clean Sustainable Energy Authority to no more than 5 years.

PROPOSED AMENDMENTS TO REENGROSSED HOUSE BILL NO. 1452

In lieu of the amendments adopted by the Senate as printed on pages 1004 through 1006 Journal, Reengrossed House Bill No. 1452 is amended as follows:

- Page 1, line 14, after "provide" insert "energy"
- Page 1, line 14, remove "low-emission technology"
- Page 1, line 14, overstrike "not"
- Page 1, line 15, overstrike "less than twenty-five percent of the total energy consumed in the United States" and insert immediately thereafter "low-emission technology"
- Page 2, line 1, replace "technologies" with "technology"
- Page 2, line 3, after the second underscored comma insert "resilient."
- Page 2, line 9, after "commerce" insert ", or the commissioner's designee"
- Page 3, line 1, after "commerce" insert ", or the commissioner's designee."
- Page 3, line 2, remove the overstrike over "~~four~~"
- Page 3, line 2, remove "two"
- Page 3, line 4, after "~~present~~" insert "to receive"
- Page 3, line 4, remove the overstrike over "~~testimony~~"
- Page 3, line 4, remove "in coordination"
- Page 3, remove line 5
- Page 3, line 6, remove "regional leaders and interested persons"
- Page 3, line 7, after "policy" insert "and low-emission technology initiative"
- Page 3, line 9, overstrike "The legislative assembly shall develop a comprehensive energy policy for the state."
- Page 3, line 11, remove "In coordination with"
- Page 3, line 12, replace "the state energy research center, the" with "The"
- Page 3, line 12, replace "shall" with "may"
- Page 3, line 13, after "on" insert "technologies related to"
- Page 3, line 14, remove "technology and"
- Page 3, line 14, remove "in energy efficiencies for the state"
- Page 3, line 15, replace "must" with "may"
- Page 3, line 15, remove "environmental benefits."
- Page 3, line 19, after "products" insert "or processes"

Page 3, line 19, replace "units" with "quantities"

Page 3, line 19, after "energy" insert "used"

Page 3, line 21, after the underscored period insert "The commission shall consider and make recommendations on policies to ensure the availability of affordable, reliable, resilient, and sustainable energy in the state; to expand value-added energy; and to expand the opportunities to diversify the use of North Dakota's natural resources, which may increase state tax revenues. The commission shall study and evaluate critical energy infrastructure and shall make recommendations to ensure the state's comprehensive energy policy supports electrical grid reliability and resiliency and supports sufficient dispatchable generation capacity to avoid brownouts, blackouts, or outages."

Page 3, line 23, after the period insert:

"6. The legislative assembly shall consider recommendations from the commission to develop a comprehensive energy policy for the state."

Page 3, line 23, after "report" insert "its recommendations"

Page 3, line 25, overstrike "6." and insert immediately thereafter "7."

Page 4, line 13, replace "without" with "while either increasing or not"

Page 4, line 19, after "impacts" insert "and increase sustainability"

Page 4, line 19, after "production" insert "and delivery"

Page 4, line 24, remove "ex officio."

Page 4, line 24, replace the second "members" with "technical advisors"

Page 4, line 31, remove "ex officio."

Page 4, line 31, replace "members" with "technical advisors"

Page 5, line 24, after "2." insert "The nonvoting technical advisors shall develop a process to review and evaluate projects to determine the technical merits and feasibility of any application, including potential benefits of the development of low-emission technology, the expansion of the development of the state's natural resources or energy production, and the contribution to the economic diversity in the state."

3. The authority may develop a loan program or a loan guarantee program under the clean sustainable energy fund. The Bank of North Dakota shall administer the loan program or loan guarantee program. The interest rate of a loan under this program may not exceed two percent per year. The maximum term of a loan under this section must be approved by the commission based on a recommendation from the authority. The Bank shall review applications for loans or loan guarantees and shall consider the business plan, financial statements, and other information necessary to evaluate the application. To be eligible for a loan or loan guarantee, an entity shall agree to provide the Bank of North Dakota with information as requested. The Bank of North Dakota may develop policies for loan participation with local financial institutions.

4."

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Page 5, line 28, after "impacts" insert "and increase sustainability of energy production and delivery"

Page 5, line 31, after "review" insert "conducted by the nonvoting technical advisors of the authority"

Page 6, line 6, replace "3." with "5."

Page 6, line 8, replace "4." with "6."

Page 6, line 21, after the underscored period insert "The commission may develop policies for the approval of loans or loan guarantees issued from the clean sustainable energy fund."

Page 8, line 9, after "**appropriation**" insert "**- Loans - Repayments**"

Page 8, after line 9 insert "1."

Page 8, after line 16, insert:

"2. Any bond proceeds deposited in the fund must be used for loans or loan guarantees. The Bank of North Dakota shall deposit in the fund all principal and interest paid on the loans made from the fund. The Bank may use a portion of the interest paid on the outstanding loans as a servicing fee to pay for administrative costs, not to exceed one-half of one percent of the amount of the interest payment. The Bank shall contract with a certified public accounting firm to audit the fund annually if the fund has any outstanding loans. The cost of the audit must be paid from the fund."

Page 8, line 25, replace "\$40,000,000" with "\$25,000,000"

Re-number accordingly

STATEMENT OF PURPOSE OF AMENDMENT:

This amendment reduces the general fund appropriation provided by the House from \$40 million to \$25 million.

REPORT OF STANDING COMMITTEE

HB 1452, as reengrossed: Appropriations Committee (Sen. Holmberg, Chairman) recommends **AMENDMENTS AS FOLLOWS** and when so amended, recommends **DO PASS** (13 YEAS, 1 NAY, 0 ABSENT AND NOT VOTING). Reengrossed HB 1452 was placed on the Sixth order on the calendar.

In lieu of the amendments adopted by the Senate as printed on pages 1004 through 1006 Journal, Reengrossed House Bill No. 1452 is amended as follows:

Page 1, line 14, after "provide" insert "energy"

Page 1, line 14, remove "low-emission technology"

Page 1, line 14, overstrike "not"

Page 1, line 15, overstrike "less than twenty-five percent of the total energy consumed in the United States" and insert immediately thereafter "low-emission technology"

Page 2, line 1, replace "technologies" with "technology"

Page 2, line 3, after the second underscored comma insert "resilient."

Page 2, line 9, after "commerce" insert ", or the commissioner's designee"

Page 3, line 1, after "commerce" insert ", or the commissioner's designee."

Page 3, line 2, remove the overstrike over "four"

Page 3, line 2, remove "two"

Page 3, line 4, after "present" insert "to receive"

Page 3, line 4, remove the overstrike over "testimony"

Page 3, line 4, remove "in coordination"

Page 3, remove line 5

Page 3, line 6, remove "regional leaders and interested persons"

Page 3, line 7, after "policy" insert "and low-emission technology initiative"

Page 3, line 9, overstrike "The legislative assembly shall develop a comprehensive energy policy for the state."

Page 3, line 11, remove "In coordination with"

Page 3, line 12, replace "the state energy research center, the" with "The"

Page 3, line 12, replace "shall" with "may"

Page 3, line 13, after "on" insert "technologies related to"

Page 3, line 14, remove "technology and"

Page 3, line 14, remove "in energy efficiencies for the state"

Page 3, line 15, replace "must" with "may"

Page 3, line 15, remove "environmental benefits:"

Page 3, line 19, after "products" insert "or processes"

Page 3, line 19, replace "units" with "quantities"

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4."

Page 5, line 28, after "impacts" insert "and increase sustainability of energy production and delivery"

Page 5, line 31, after "review" insert "conducted by the nonvoting technical advisors of the authority"

Page 6, line 6, replace "3." with "5."

Page 6, line 8, replace "4." with "6."

Page 6, line 21, after the underscored period insert "The commission may develop policies for the approval of loans or loan guarantees issued from the clean sustainable energy fund."

Page 8, line 9, after "**appropriation**" insert "**- Loans - Repayments**"

Page 8, after line 9 insert "1."

Page 8, after line 16, insert:

"2. Any bond proceeds deposited in the fund must be used for loans or loan guarantees. The Bank of North Dakota shall deposit in the fund all principal and interest paid on the loans made from the fund. The Bank may use a portion of the interest paid on the outstanding loans as a servicing fee to pay for administrative costs, not to exceed one-half of one percent of the amount of the interest payment. The Bank shall contract with a certified public accounting firm to audit the fund annually if the fund has any outstanding loans. The cost of the audit must be paid from the fund."

Page 8, line 25, replace "\$40,000,000" with "\$25,000,000"

ReNUMBER accordingly

STATEMENT OF PURPOSE OF AMENDMENT:

This amendment reduces the general fund appropriation provided by the House from \$40 million to \$25 million.

April 7, 2021

PROPOSED AMENDMENTS TO REENGROSSED HOUSE BILL NO. 1452

In addition to the amendments adopted by the Senate as printed on pages 1004 through 1006 of the Senate Journal, Reengrossed House Bill No. 1452 is further amended as follows:

Page 1, line 23, after "gas" insert ", battery storage technologies"

Page 4, line 27, replace "Two members" with "One member"

Page 4, line 28, replace "Two members" with "One member"

Page 4, line 29, replace "Two members" with "One member"

Page 4, line 29, remove "and"

Page 4, line 30, after "association" insert ":

- f. One member representing the wind energy industry appointed by the governor;
- g. One member representing the solar energy industry appointed by the governor; and
- h. One member appointed by the North Dakota Indian affairs commission"

Page 6, line 1, replace "At the request of the authority" with "If a project exceeds one million dollars"

Page 6, line 3, after "shall" insert "conduct a cost-benefit analysis and"

Page 7, line 11 remove "To the extent the commission or authority determines the materials or data consist of"

Page 7, remove lines 12 through 17

Page 7, line 18, remove "2."

Page 7, after line 28 insert:

- "f. An estimate of the length of time the records must remain confidential to protect the project, not to exceed five years."

Page 7, line 29, replace "3." with "2."

Page 8, line 5, replace "4." with "3."

Re-number accordingly

STATEMENT OF PURPOSE OF AMENDMENT:

This amendment:

- Adds batteries to low-emission technology;
- Replaces 1 member appointed by the Lignite Research Council, 1 member appointed by the Oil and Gas Research Council, and 1 member appointed by the Renewable

Energy Council with 1 member representing the wind energy industry appointed by the Governor, 1 member representing the solar energy industry appointed by the Governor, and 1 member appointed by the Indian Affairs Commission as voting members on the Clean Sustainable Energy Authority;

- Requires a cost-benefit analysis for projects; and
- Limits the confidentiality of records submitted to the Industrial Commission or Clean Sustainable Energy Authority to no more than 5 years.