

Enhance, Preserve and Protect the North Dakota Lignite Industry



Project Management
Research & Development
Environmental
Legal
Power Markets
Transmission Planning



January 1, 2023 – December 31, 2025

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Enhance, Preserve and Protect Project Project Management, Research & Development, Environmental, Legal, Power Markets and Transmission Planning

ABSTRACT

The Enhance, Preserve and Protect Project (EPP) continues to build on the ongoing commitment and cooperation among government agencies, elected leadership and the lignite industry to ensure the long-term viability of the North Dakota lignite industry. The project began as the result of an extensive analysis by leaders of the lignite industry focused on the state of the industry in North Dakota, as well as the coal industry nationwide. The analysis concluded that federal legislative and regulatory policy moved in a direction which jeopardized the future development of North Dakota's vast lignite resources and created great uncertainty regarding the viability of existing lignite generation plants. The regulatory environment continues to be dynamic, and the EPP project will continue to work with industry and regulators so that North Dakota can make the best use of our vast lignite resource into the future.

Early project work included development of a technology development roadmap under the guidance of the lignite industry. This roadmap will continue to be updated as needed to guide technology development required for lignite conversion systems. The EPP Project will focus on preserving and enhancing the existing lignite industry while at the same time providing continued technical support to activities under the Advanced Energy Technology Program which focuses on new opportunities to capitalize on North Dakota vast lignite resources. The State of North Dakota and lignite industry continue to benefit from the EPP, as they supply energy to regional residents and industry, while strengthening the economy through creation of jobs and clean, low-cost reliable electricity.

Project Objectives

One of the primary objectives of the EPP Project is to preserve and protect the existing lignite fleet in North Dakota. The Project also continues to look to the future and assist the state and industry in understanding where the "new" opportunities are for this abundant resource in the future. Finally, the Project will continue to explore new avenues to develop value-added opportunities for lignite and its combustion byproducts. Options include rare earth elements and critical minerals that exist in significant quantities in the lignite found in North Dakota, using excess process heat and CO₂ from power plants to develop green houses, development of building materials and carbon materials from lignite, and carbon dioxide used for enhanced oil recovery, to name a few. Value-added opportunities will also include demand side technologies that can consume off-peak electricity, such as electric vehicles and data mining.

To achieve the EPP Project objectives the EPP Project team will develop and implement research & development, environmental, legal, power markets and transmission strategies. These strategies will include addressing technology challenges for existing plants to achieve compliance with regulations and to discover new and innovative ways to use lignite and its byproducts in order to ensure the future of lignite in North Dakota for

years to come. Additionally, the EPP Project team will enhance the partnership with the state by working with state agencies and officials to understand the legal and economic implications of legislative and regulatory initiatives on the lignite industry, one of North Dakota's largest industries. The Project team will also monitor the progress of current and future Advanced Energy Technology projects and eliminate any potential duplication of efforts among these activities, thereby maximizing value for the State of North Dakota. Strategic studies will be performed for better understanding the value of technology developments, provide critical information for the State on commercial potential of emerging markets, evaluate the economics associated with technologies and the lignite industry, and the impacts of outside factors on the industry and North Dakota.

Key personnel involved in the management of the Enhance, Preserve and Protect Project are Jason Bohrer, LEC President and EPP Project Policy Advisor; Mike Holmes, LEC Executive Vice President of Research and Development, EPP Principal Investigator and Technical Advisor to the NDIC; Angie Hegre, LEC Research and Development Program Manager and EPP Project Manager; and Principal Investigators, Jonathan Fortner, LEC Vice President of Government Relations / External Affairs and Environmental management and power markets lead for the EPP; and John Weeda, Director of the North Dakota Transmission Authority and transmission lead for the EPP. The EPP Project team will work together with consultants who have research & development, environmental, legal, power markets and transmission technical expertise to complete the project activities.

The EPP Project is seeking \$3,519,189 from the North Dakota Industrial Commission (NDIC) over a period of 36-months (January 1, 2023 – December 31, 2025).

BACKGROUND

A. State Policy

In 1991, the North Dakota Legislative Assembly enacted legislation creating the Lignite Research, Development and Marketing Program and declaring that:

“...it is an essential governmental function and public purpose to assist with the development and wise use of North Dakota's vast lignite resources by supporting a lignite research, development, and marketing program that promotes economic, efficient, and clean uses of lignite and products derived from lignite in order to maintain and enhance development of North Dakota lignite and its products; preserve and create jobs involved in the production and utilization of North Dakota lignite; ensure economic stability, growth, and opportunity in the lignite industry; and maintain a stable and competitive tax base for our state's lignite industry for the general welfare of North Dakota.....” (NDCC § 54-17.05-01)

In the past the North Dakota Legislative Assembly has appropriated funding from the Lignite Research Fund for the purpose of contracting for services that will focus on the preservation of existing jobs and production as well as the growth of the lignite industry. The NDIC, with policy advice and funding recommendations from the Lignite Research

Council, has administered this program. As guidance to the NDIC for the use of the nonmatching funding, the Legislature stated that:

“...Moneys appropriated pursuant to this section may ... be used for the purpose of contracting for nonmatching studies and activities in support of the Lignite Vision 21 Project; for litigation that may be necessary to protect and promote the continued development of lignite resources; for nonmatching externality studies and activities in externality proceedings; or other marketing or environmental activities that assist with marketing of lignite-based electricity and lignite-based byproducts...” (Chapter 14, Section 11, 2011 ND Session Laws)

During the 2017 North Dakota Legislative Assembly, the State approved an additional \$3 million from the Strategic Infrastructure and Improvements Fund for supporting the Advanced Energy Technology (AET) projects directed at late-stage evaluation of technologies under consideration for commercial application in North Dakota. In the 2019 North Dakota Legislative Assembly, the State approved an additional \$10 million and that was made continuous in the 2021 Assembly. The AET program allows expansion of the projects to include technology solutions for existing plants, including carbon capture and low carbon options.

B. Industry Economic Impact, Challenges, and Opportunities

Over the years, lignite producers in North Dakota have maintained a steady annual production level at approximately 30 million tons. North Dakota ranks as one of the top ten coal producing states in the country and as of 2019 is the top lignite mining state in the country. In 2019, the lignite industry employed approximately 3,620 direct workers in all segments of the industry. Direct, indirect, and induced economic effects were estimated to support a total of 13,100 jobs in the state of North Dakota. The lignite industry also supports about \$1 billion in labor income, which represents wages, salaries, benefits, and sole proprietor’s income. The industry also contributes \$1.8 billion to the state’s gross domestic product, and the industry’s gross business volume was estimated at \$5.4 billion. In addition, the industry continues to provide the clean, low-cost, reliable electricity that is the cornerstone of our state economy.

After strong growth in the 70s and 80s, the market for electricity produced by North Dakota lignite reached a plateau. The start-up of the combined heat and power Spiritwood facility near Jamestown in 2014 marked the first new lignite-based energy conversion facility in over 20 years. This was a significant milestone considering the challenges facing the lignite industry. These challenges include increasingly stringent federal environmental regulations; carbon dioxide capture, utilization and storage targets; competition from other energy sources; legislative mandates from surrounding states which impact the continued use of lignite-based electric generation and concerns about the adequacy of transmission infrastructure in light of oil and gas development in western North Dakota, as well as constant monitoring of the status of export constraints on the existing transmission system. In addition to limiting sale of lignite fired electricity, transmission constraints can increase the impact of regional wind power on the existing coal units.

Another challenge to the State of North Dakota and the lignite industry is to design a comprehensive program to alter the present “anti-coal” campaign and replace it with a strategy that recognizes the importance of all forms of energy as a way to ensure our nation’s energy security as well as the strategic importance of the many value-added opportunities available through new innovations that have been identified. Lignite-based electric generation has been at the heart of North Dakota’s economy for decades, providing low-cost reliable and dispatchable electricity to farmers, ranchers, businesses (large and small) and consumers. If the on-going campaign to eliminate coal is successful, affordable electricity to fuel North Dakota’s future will be a thing of the past. To continue to address this changing landscape the lignite industry plans to continue the focus on its regulatory / legislative program, as well as enhancing its research and development work. The purpose of the EPP Project is to continue to align industry efforts with the state’s mission to “maintain and enhance development of North Dakota lignite” to strengthen the industry / State partnership. Through this refocused effort, the State of North Dakota will benefit from continued access to low-cost, reliable, and clean energy as well as have the opportunity to see new industries locate in ND like Rare Earth and Critical Element extraction to provide critically needed material for numerous 21st Century applications that require these materials. This is one of the many emerging markets with potential for application in North Dakota. Others include carbon-based materials, additional fertilizer production, and combined heat and power projects that use the remaining process heat from lignite power plants.

A continually growing focus of the State / Industry partnership has been in solutions for carbon management. North Dakota has a unique opportunity to diversify the products from lignite fired power plants by adding CO₂ as a commodity. CO₂ captured from lignite fired power plants could facilitate a second round of oil recovery from the conventional oil fields as well as in the Bakken formation. This would greatly increase the tremendous economic boom experienced over the last decade resulting in economic activity to the benefit of all North Dakotans. A study performed to evaluate the impact of carbon capture and use in North Dakota oil recovery showed that the impact on employment alone could be as high as 14,000 additional jobs. In the near-term industry is looking to fund geologic storage of CO₂ through a federal incentive (45Q).

PROJECT DESCRIPTION

A. Overall Objectives

The objective of the EPP Project is to protect and extend operation of the existing lignite facilities while at the same time seeking technology solutions for existing plants and new technologies for the future of the North Dakota lignite industry. To achieve the EPP Project objectives, the Lignite Energy Council (LEC), in conjunction with the lignite industry partners, will continue to develop, and implement research and development, environmental, legal, power market and transmission strategies that will enhance, preserve, and protect existing facilities and the future development of North Dakota’s lignite resources. The EPP Project team will monitor progress, avoid duplication of services, and maximize value to the State by working with industry, technology developers, federal and state agencies, and other interested parties in finding solutions

that will allow the state to maintain existing lignite facilities and to provide for new growth in the lignite industry. Activities and tasks that will be addressed by the EPP Project include:

- Project Management
- Research & Development Studies and Activities
- Environmental Strategies and Activities
- Legal strategies and Activities
- Power Markets
- Transmission Strategies and Activities

The project team will work along with consultants who have legal, research & development, environmental, and transmission technical expertise to execute the project. A detailed description of the management organization and qualifications of key personnel are outlined on pages 12 through 14, and the organizational chart is provided in Appendix 3.

B. Statement of Work

The EPP Project team will provide overall program management responsibility for the project. Key personnel identified above will be responsible for completing EPP Project tasks and achieving program objectives. The timeframe for the project is estimated at 36 months (January 1, 2023, to December 31, 2025) with an estimated budget of \$3,519,189. Tasks and timeframes for the project activities are summarized below and outlined in Appendix 2.

C. Phase V Task Summaries

Task 1.0: Project Management – 36 months (\$596,978)

Task 1.1 Reports - The Program Manager will prepare and submit biannual reports, final reports, and other reports as required to satisfy all contractual requirements. The Program Manager will prepare other written and oral presentations as requested or required to achieve the objectives of the EPP Project and communicate the activities. The reporting and presentations will be used to extract value and communicate key findings with the NDIC, other state leaders and industry and the North Dakota Public.

Task 1.2 Advanced Energy Technology Contract Administration – Administration of the Advanced Energy Technology (AET) contracts will continue, and the Principal Investigator will oversee compliance with NDIC conditions imposed in the participants' contracts in addition to the following:

- 1) Review and approval of detailed scopes of work, budget, and milestone charts, progress reports, for each phase of the Advanced Energy Technology participant's activities.

- 2) Review and approval of activities and studies that evaluate cost-effective North Dakota lignite-fueled generation options and promote efficient and clean use of North Dakota lignite.
- 3) Review and approval of activities and studies that maximize efficient use of available state and industry funds and avoid duplication among the technology developers and AET participants, particularly in the generation, environmental, and transmission areas.
- 4) Monitor the continued work on existing AET contracts allowing these activities to be completed to allow the State of North Dakota to derive the maximum benefit for the work completed in pursuing the objectives of this program.

The Principal Investigator or his designee will meet by conference call or personally with each Advanced Energy Technology participant monthly or as needed to monitor progress and ensure compliance with the NDIC grant conditions.

Task 1.3 Administration and Support Facilities - The LEC will provide the necessary direction, administration, and technical support for the project. The EPP Project team will provide contract, personnel, and budget supervision throughout the term of the grant. In addition, the EPP team will facilitate communications between the Lignite Research Council, lignite industry, NDIC, North Dakota Legislative Assembly, Congressional delegation, national and regional associations, and other federal and state agencies.

Task 2.0: Research & Development Studies and Activities – 36 months (\$1,120,445)

Task 2.1 The EPP Project team will engage in activities that include:

- 1) Tailoring criteria pollutant control strategies to meet the regulatory requirements placed on existing and new facilities.
- 2) Identifying new revenue streams based on value-added products from lignite and/ or products produced from regulated emission streams.
- 3) Participation as a global player in groundbreaking research, partnering with lignite interests around the world; and
- 4) Exploring high risk, high payoff technology options for the lignite resource.
- 5) Complete strategic studies on topics related to technology, economic impacts, and commercial potential of emerging markets.

This set of refocused activities will have an elevated focus on emerging markets and carbon footprint and will be critical to successfully meeting the overall goals of the EPP Project.

Task 3.0: Environmental Strategies and Activities – 36 months (\$392,008)

Task 3.1 Technical Services Coordination – The EEP Project Team will coordinate industry responses to environmental issues that may jeopardize the future of existing generation facilities as well as the future growth of the North Dakota lignite industry in order to avoid unnecessary cost and duplication and maximize value for the State of North Dakota. The most significant environmental challenges facing existing generation facilities include:

1. Continued efforts by regulatory agencies and environmental groups to impose stringent new regulations which will create significant issues for the continued use of lignite.
2. Issue between the EPA and the State of North Dakota over modeling protocols and actual emission monitoring data.
3. Supporting the State’s regional haze state implementation plan.
4. Utility maximum achievable control technology determinations for various regulations.
5. New source performance standards for existing plants, carbon dioxide management, and the regulation of carbon capture and sequestration and enhanced oil recovery.
6. Regulation of effluent discharges.
7. New standards for particulate matter and ozone.
8. New standards for cooling water intake structures.
9. Development of stream protection rules; and
10. Regulation of coal combustion residuals as hazardous wastes and the regulation of the use of coal combustion residuals at mining operations.

The EPP Project team will coordinate and develop environmental strategies to address these challenges during the grant period, including the development of more aggressive partnerships with national and regional organizations with similar concerns regarding the scientific justification and economic impact of the federal regulatory agenda. The Project team will also develop stronger cooperative programming throughout the region to monitor and address actions by agencies and legislatures in surrounding states that may have negative implications for the lignite industry. As issues develop the EPP Project team will establish individual tasks that identify the issue and necessary actions to be taken and highlight results. These tasks will be included in the project reports.

Task 4.0: Legal Strategies and Activities – 36 months (\$220,391)

Task 4.1 Legal Strategies – Legal assistance, including support and analysis regarding federal and state administrative actions and potential litigation, may be

needed on issues resulting from ongoing federal rulemakings or similar state proceedings in North Dakota and other states. The actions listed in Task 3.0 may also warrant legal support. In addition, the ND Transmission Authority may benefit from legal assistance to respond to Federal Energy Regulatory Commission (FERC) proposed rules in addition to rules and policies from Regional Transmission Organizations (RTOs) such as rate tariffs, return on equity, cost allocation, siting, and routing. Legal support may also be needed to help attract developers for the construction of new transmission infrastructure to support a more robust energy industry in North Dakota. The EPP Project team will coordinate these activities.

Task 5.0: Power Markets and Strategies – 36 months (\$517,470)

Utility generation and transmission planning relies on demand forecast and strategies from MISO and SPP. This task includes consultant fees and expenses to make this information available. These tasks allow for LEC to provide the North Dakota Transmission Authority (NDTA) and industry with this critical information as they move forward with their efforts.

Task 5.1 Midcontinent Independent System Operator (MISO)- LEC staff will engage in the regional electricity market known as MISO to improve generation resource attribute value which is currently not provided in the marketplace. The Lignite Energy Council joined MISO as a member in 2020 to advocate for stronger price signals for baseload, dispatchable resources in the electricity market. In that same year, the Federal Energy Regulatory Commission voted to approve a new stakeholder group to be placed on the MISO Advisory Committee, along with the Planning Advisory Committee (PAC) with an official seat along with voting rights on each committee.

LEC now serves in a leadership position serving as the Chair of the Affiliate Sector, which is one of eleven stakeholder groups with representation and voting rights on the Advisory Committee (AC). LEC's Jonathan Fortner is the Chairman and attends the meetings and provides a voice for coal in the marketplace while also pushing for valuing the attributes that coal possesses in the Midcontinent Independent System Operator (MISO) grid.

To be able to provide tracking coverage of the committee process and in-depth analysis of market activities and proposals, LEC is going to utilize contract support with an energy consulting firm that provides economic, regulatory, and technical analysis and advice to a wide range of energy clients. The firm has been providing analysis of wholesale and retail energy markets and projects and provides a host of analytical and support services for power resources throughout the United States. They provide regulatory support on complex matters and expert testimony at the regional transmission organization (RTO), State, and Federal Energy Regulatory Commission (FERC) level. The firm has expert knowledge on RTOs and maintains an RTO division that is fully dedicated to monitoring and analyzing issues at the RTO level.

Task 5.2 Southwest Power Pool (SPP)- LEC joined SPP in 2021 to advocate for stronger price signals for baseload, dispatchable resources in the electricity market. LEC is a part of the Markets and Operations Planning Committee along with the Membership Committee.

To be able to provide tracking coverage of the committee process and in-depth analysis of market activities and proposals, LEC has contract support for background in rural cooperative electric and electricity market issues.

Task 5.3 Power Demand Forecast- Engage with BARR Engineering to continue to develop power demand forecasting as it relates to the future of North Dakota's electricity generation resources. To help understand the demand for electricity in the growth area in the oil producing counties, along with population growth across the state, the LEC will commission additional studies estimating the growth over the next 20 years.

Task 6.0: Transmission Strategies and Activities – 36 months (\$671,896)

Task 6.1 Transmission Development Planning – The North Dakota Transmission Authority (Authority) staff will participate in planning processes focused on the development of new transmission infrastructure not only in North Dakota, but in the region. Whether the scope of the planning process is national, regional, or state, the Authority will participate in order to protect North Dakota's interest. The NDTA will participate in studies for transmission planning on a regional basis and a national basis as appropriate. Input will be provided that is consistent with North Dakota's policy of "all of the above" energy options.

Task 6.2 Transmission Owner/Development Outreach – Authority staff will conduct outreach with transmission owners, developers of new power generation opportunities, and other participants to secure feedback on transmission development planning process and other issues related to transmission development in North Dakota. The Authority will be available engage a broad range of audiences that include industry, business and other public interests.

Task 6.3 Interaction with Government Entities – Authority staff will interact with the Congressional Delegation and other federal government agencies such as DOE, FERC, and NERC on federal legislation involving transmission infrastructure or other federal issues. In addition to tracking Federal activity, the Authority will provide technical support for consideration in state legislative initiatives and participate in the North Dakota legislative interim process on legislative studies dealing with transmission development and related issues. Authority staff will also participate on the EmPower ND Commission, the energy policy commission formed by the North Dakota Legislative Assembly.

Task 6.4 Technical Services – The Authority will continue to discuss with transmission developers, opportunities for the Authority to help finance technical studies that will be of benefit to the State of North Dakota, future development of energy generating facilities in North Dakota and/or future transmission development.

Task 6.5 The Authority will communicate frequently with the Public Service Commission and the Governor’s office in addition to the Industrial Commission to ensure that the messages are coordinated well with the direction of the State. Annual reports will be prepared on Authority activities and on the resilience of the grid as required by the ND Century code to assure that the Industrial Commission and the Legislative are well informed about the Transmission Grid.

QUALIFICATIONS

A. Capabilities and Experience

The Lignite Energy Council is a trade organization comprised of 250+ members including major lignite producers who produce a total of 30 million tons annually, the nation’s largest commercial gasification project, and investor-owned utilities and rural electric cooperatives from a multi-state area that generate electricity from lignite serving millions of people from Canada to Texas. For over 30 years, the Lignite Energy Council has maintained a formal partnership with the NDIC to assist with administration of the Lignite Research, Development and Marketing Program and provide technical assistance to the NDIC.

Besides partnering with the NDIC on the development and implementation of the state’s research and development program, the Lignite Energy Council manages a regional public relations program for lignite-based electricity and an education program that trains teachers from across the region about the lignite industry. Because of the important impact that governmental policies have on the competitive position of lignite and the ability to develop new lignite projects, the Lignite Energy Council is also involved in various governmental relations activities such as legislative, Congressional, and public official forums and briefings.

The Lignite Energy Council has effectively managed similar contracts with the NDIC dating back to May 1999. Based on this experience and the above-described capabilities, the Lignite Energy Council is capable of administering the Enhance, Preserve and Protect Program.

B. Key Personnel

EPP Project Policy Advisor

Jason Bohrer is president & chief executive officer of the Lignite Energy Council. He is a graduate of North Dakota State University and earned his law degree from George Mason University. He is a member of the National Coal Council and

the North Dakota Empower Commission. Prior to joining the Lignite Energy Council, Bohrer worked nine years in Washington, D.C. During his career, Jason has worked on energy policy initiatives related to coal mining and energy development, as well as nuclear energy and waste disposal, oil and gas exploration, energy tax credits, hydropower relicensing, and biomass and other renewable energy projects. He has also drafted legislation to facilitate the expansion of the nation's transmission infrastructure and improve cybersecurity protocols. He was named to his current position in 2013 and has worked to expand its R&D capabilities, public affairs, and legislative programs.

EPP Principal Investigator / Technical Advisor

Mike Holmes has more than 30 years of experience with the development of technologies leading to the clean and efficient use of coal. Prior to coming to the Lignite Energy Council, Mr. Holmes spent 15 years each in technology development at Babcock and Wilcox in Alliance, Ohio and The Energy and Environmental Research Center (EERC) at the University of North Dakota. At the EERC, he served as director of Energy Systems Development, where he oversaw fossil energy research areas. His principal areas of interest and expertise include CO₂ capture; fuel processing; gasification systems for coproduction of hydrogen, fuels, and chemicals with electricity; process development and economics for advanced energy systems; and emission control technologies. In January of 2017 he was hired to serve as the Senior Vice President of Research and Development for the Lignite Energy Council, and the NDIC appointed Mr. Holmes to serve as the Technical Advisor to the NDIC for the North Dakota Lignite Research, Development and Marketing Program. Mr. Holmes received B.S. degrees in Chemistry and Mathematics at Mayville State University and his M.S. degree in Chemical Engineering at the University of North Dakota.

EPP Project Manager

Angie Hegre has more than 13 years of experience in the energy industry. Before she joined the Lignite Energy Council in 2019, she worked for Great River Energy as the Generation Support Coordinator. Ms. Hegre worked with Senior leadership in Minnesota and the North Dakota executive team including the Director of ND Generation. She worked with environmental reporting requirements, and compliance record retention for regulatory and safety. She worked in-line with engineering and operations managing year-end and outage reporting. Ms. Hegre was hired by the LEC in August 2019 and is the Research and Development Program Manager. She has been supporting the Lignite Research Council grant rounds to include working with the NDIC, principal investigators, technical reviewers, and technical advisor. She has taken on the requirement of the bi-annual summaries and EPP reports to the NDIC. Ms. Hegre works with the Director and Deputy Director of the ND Transmission Authority, providing reports, presentations, and research assistance. Angie attended Central New Mexico College and lived in New Mexico for over 20 years before moving back home to North Dakota in 2009.

Environmental Management and Power Markets Lead

Jonathan Fortner has been with the Lignite Energy Council since 2018 and serves as the Vice President of Government Relations and External Affairs. He has over ten years of combined experience working in a variety of roles as a legislative staffer for the Minnesota House of Representatives and as a lobbyist for the Faegre Baker Daniels law firm and working on many local, legislative, and statewide campaigns in Minnesota politics. At the LEC, Jonathan works on legislative issues in North Dakota, Minnesota and Washington DC as well as serves as the Chair of the Affiliate Sector on the Advisory Committee of the Midcontinent Independent System Operator (MISO) representing the coal industry in the electricity market and regional grid.

Jonathan is a graduate of the University of North Dakota where he received a master's degree in business administration and a master's degree in public administration. He is also a Policy Fellow at the Humphrey School of Public Affairs at the University of Minnesota and a recent graduate from the University of Mary's Leadership North Dakota program.

ND Director of the Transmission Authority

John Weeda has served as the Director of the North Dakota Transmission Authority since February 2018. He retired in 2017 as the director of North Dakota Plant Operations for Great River Energy. He was selected to serve as the director of the North Dakota Transmission Authority by the North Dakota Industrial Commission. Weeda is a Mandan, ND, native, and worked 41 years with Great River Energy. He graduated from the University of North Dakota with a bachelor's degree in mechanical engineering. He spent much of his career at the Coal Creek Station where he worked in various positions before becoming plant manager in 1989. He was promoted to director of North Dakota Plant Operations in 2010 and supervised all three of Great River Energy's coal-based power plants: Coal Creek Station, Stanton Station and Spiritwood Station, until his retirement.

(Resumes of EPP Consultants are available upon request)

VALUE TO NORTH DAKOTA

With an existing lignite fleet representing more than \$18 billion of capital investment in North Dakota, it is imperative that regulatory and statutory initiatives at the federal level or initiative by states in the region be cost-effective and based on sound science. The primary objective of the EPP project is to protect and preserve the industry investment. The State stands to lose approximately 3,620 direct jobs and a significant portion of the over 13,100 indirect and induced positions related to providing services to the industry if as partners, the State and the lignite industry cannot find technology solutions and proactively address the development of reasonable regulations based on sound science. Also, directly at risk if the existing lignite industry is not protected is state and local revenues of over \$130 million and gross business volume for the industry estimated at \$5.4 billion annually. The value to North Dakota of the EPP Project grant is the ability to

enhance, preserve and protect an industry that has provided low-cost and reliable electricity to the region for many generations.

BUDGET - EPP PROJECT COST SUMMARY BY TASK

1.0	Project Management	36 months	\$596,978
2.0	Research and Development Strategies / Activities	36 months	\$1,120,445
3.0	Environmental Strategies / Activities	36 months	\$392,008
4.0	Legal Strategies / Activities	36 months	\$220,391
5.0	Power Markets	36 months	\$517,470
6.0	Transmission Strategies / Activities	36 months	\$671,896
	Totals	36 months	\$3,519,189

No additional facilities are needed to implement this budget. See Appendix 1 for more detailed budget description.

MANAGEMENT

See description of project management under “Project Description, C. EPP Project Task Summaries.” Also see Organizational Chart in Appendix 3.

TIMETABLE

The Enhance, Preserve and Protect project will begin under this contract on January 1, 2023, and end on December 31, 2025. Semiannual project reports will be submitted to the NDIC as mentioned in the “Project Description” section.

MATCHING FUNDS

The EPP project will use nonmatching funds from the lignite research fund consistent with the intent of the North Dakota Lignite Research, Development and Marketing Program as

described in the “Background, A. State Policy” section. Previous grants for the EPP Project were approved to use nonmatching funds from the lignite research fund. The total nonmatching funds requested are \$3,519,189.

TAX LIABILITY

I, Jason Bohrer, certify that the Lignite Energy Council is not delinquent on any tax liability owed to the State of North Dakota.

Jason Bohrer, President
Lignite Energy Council

CONFIDENTIAL INFORMATION

This grant application contains no confidential information.

STANDARDS OF SUCCESS

The project proposal has included work task objectives (See Project Description, above). The EPP Project team will submit periodic reports addressing progress under each of the tasks. Documented accomplishments and progress in each of the task areas will provide a standard of success.

Appendix 1

Enhance, Preserve and Protect Program IX Budget Estimate January 1, 2023 – December 31, 2025 (36 months)

Project Management

Management fees for the EPP project include the LEC providing offices, travel, rent, printing, postage, and equipment. The LEC also provides direction, administration, and technical support for the EPP Project. The project team will write the necessary reports and facilitate communication among the critical partners including the NDIC, Lignite Research Council, lignite industry, ND Legislative Assembly, Congressional Delegation, national, regional, and state associations, federal and state agencies, and the public.

\$596,978

Research & Development Activities

The budget includes funds to focus on four critical areas; emission reductions, new generation options, value-added products from lignite, and global lignite research and development activities, which will allow continued use of lignite for the benefit of North Dakota in the future.

\$1,120,445

Environmental Strategies

The budget includes funding to address existing and future environmental issues which may force the early retirement of the existing lignite-based generation in North Dakota and challenge the future development of new lignite-based projects. These efforts may include developing strategies to address future federal, regional, state and local statutory, regulatory, and policy determinations.

\$392,008

Legal & Marketing

Legal consultants may be needed to assist in developing environmental and transmission strategies and in assisting with potential legal challenges at the state and federal levels. The budget includes the consultant fees and expenses and the cost of education materials.

\$220,391

Power Markets

Utility generation and transmission planning rely on demand forecast And strategies from MISO and SPP. The budget includes consultant fees and expenses to make this information available to the NDTA and industry.

\$517,470

Transmission

Funding covers the expenses associated with Authority staff participating in the numerous activities outlined in Task 5.0. The budget also includes funds for transmission studies.

\$671,896

Total: \$3,519,189

Appendix 2

Enhance Preserve and Protect Project Project Schedule with Milestones and Deliverables

TASK	2023												2024												2025												
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	
Task 1.0 Project Management																																					
1.1 Reports																																					
1.2 Advanced Energy Technology Projects																																					
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2.1 Preserve, Protect and Enhance R&D																																					
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Task 4.0 Markets & Planning Strategies																																					
4.1 Technical Services Coordination																																					
Task 5.0 Legal Strategies																																					
5.1 Coordination of Legal Strategies																																					
Task 6.0 Transmission Activities																																					
6.1 Transmission Development Planning																																					
6.2 Owner/Development Outreach																																					
6.3 Government Interaction																																					
6.4 Technical Services																																					

Summary of Milestones and Deliverables:

Contract Award / Project Start: January 1, 2023	
Semi Annual Report due dates	
Completion / Project End Date: December 31, 2025	
Schedule	

Appendix 3

Organizational Chart

