

Clean Sustainable Energy Authority

North Dakota Industrial Commission

Application

Project Title: Project Phoenix: Manufacturing bio-degradable polymers using methane as feedstock.

Applicant: Newlight Technologies, Inc.

Date of Application: May 19, 2023

Amount of Request

Grant: **\$ 0 USD**

Loan: **\$150 MM USD**

Total Amount of Proposed Project: **\$446 MM USD**

Duration of Project: **35 months from CSEA Approval**

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ABSTRACT

Background:

Founded in 2003, Newlight is a nature-inspired biotechnology company based in California that is converting air and greenhouse gas into a biomaterial called AirCarbon®. Newlight's mission is to help end plastic pollution and climate change by replacing plastic with AirCarbon, creating global-scale economic and environmental value.

Newlight uses a technology that is found in ecosystems throughout the world, including in the ocean, wherein naturally-occurring microorganisms consume air and greenhouse gas, including methane and carbon dioxide, through fermentation to produce a muscle-like material inside of their cells called PHB. PHB is an energy storage material made in most living organisms, from marine microorganisms to the roots of plants, and can be melted into shapes as a replacement for plastic. Newlight is the first company to directly transform greenhouse gases into PHB, a biomaterial that the company calls AirCarbon, at commercial scale.

AirCarbon competes on performance with various grades of polypropylene, the second largest-volume plastic in the world. With a variety of potential industries to serve, Newlight's primary focus is on addressing ocean plastic pollution by displacing plastic in the foodware market, starting with straws, cutlery, and coated paper products. In addition to foodware, Newlight is also seeding expansion in automotive and fashion applications. Newlight launched its first commercial-scale AirCarbon production facility in 2020, and today Newlight's customers and partners include Shake Shack, Nike, Target, H&M, Ben & Jerry's, Sumitomo, US Foods, and Sysco, with millions of AirCarbon units delivered to consumers to date.

In this application, we are requesting financial support in the form of a \$150 million loan to support EPC related to a future plant in North Dakota.

We have completed two stage gates, FEL1 and FEL2. Newlight is poised to award FEL3/FEED contract to Burns & McDonnell after having competitively bid to ten recognized EPC firms. Newlight also received a CSEA grant in 2022 (\$4,185,625), this money will be used for FEED in addition to money awarded here.

Objectives:

Newlight executed a feasibility /location study that was partially funded by the Renewable Energy Program/Industrial Council in 2021. This study, concluded in 2022 as Phase 1 of the overall project, showed that there is reason to believe that developing a large-scale industrial plant to produce AirCarbon in the state, while challenging, is very feasible, and several sites were considered. While Newlight has signed a contract to build a plant in Ohio, Newlight is still very interested in developing a facility at the Marley Crossing/Savage Services location near Trenton (like many of the projects under CSEA consideration).

However large the potential, currently Marley Crossing is undeveloped land, and to support an AirCarbon plant, gas, water, and power infrastructure and related suppliers need to be in place and fully

vettted. Mitigating the risks associated with the infrastructure build-out and the input costs associated with the site needs to work to meet shareholder targets. In addition, the climate of North Dakota will result in some special requirements related to climate and transporting equipment into the area. Solving these cost inputs, engineering and infrastructure issues is the primary objective of Phase II in this request.

The objectives are:

- Fund engineering, design, construction, commissioning and startup work for a plant in northwest North Dakota engineered to North Dakota's specific climate and associated construction window as well as additional engineering to support future carbon sequestration opportunities.
- Fund further work that supports the build-out of needed infrastructure at Marley Crossing, by working with suppliers (and the other project developers at Marley Crossing) to obtain the optimal infrastructure and input economics to pass through the final "gate" and began plant construction.
- Work with the State and Williams County to find solutions or mitigation strategies for any open challenges and/or risks that once mitigated can help to add Newlight to the state's portfolio of leading-edge technologies companies that will contribute to realizing the state's Carbon Neutral 2030 goal, CSEA's goals and benefit ND overall.

Expected Results:

- Complete the engineering and plant design through several milestone gates, including any special requirement needed in North Dakota.
- Construct, start up and operate AirCarbon plant in North Dakota.

Duration:

We expect the project will take approximately 35 months to complete after CSEA loan approval.

Total Project Costs:

We anticipate total project costs to be \$446 million.

Participants:

The participants include Newlight, Burns & McDonnell for FEL3/FEED and selected specialty contractors and consultants. EPC contractor to be confirmed at future date.

PROJECT DESCRIPTION

Objectives:

The long-term objective of the project is to increase the demand for State's renewable energy and plentiful methane gas through in-state production of a natural, biodegradable material that is a viable alternative to single-use plastic – AirCarbon. North Dakota has established an aggressive carbon neutral goal by 2030, and a key component of that will be finding environmentally sound, local uses for natural gas that does not rely on pipeline delivery out of state. We believe that AirCarbon production become a major component of that goal. For us, achievement of the long-term goal requires the execution on a set of near-term project phases. The second phase of the overall project (this funding request) is focused on engineering, design, and the cost of infrastructure build-out as well as leveraging the work that has been done in the State in the carbon sequestration area.

Single-Use Plastics and AirCarbon

Single-use plastics made from petroleum are not bio-degradable. They are the cause of massive environmental problems that are forcing many governments to implement or consider restrictions. However, most experts forecast large increases in plastic demand due to the low-cost to produce and the high costs of making materials that have the same performance characteristics. Some newer materials are compostable. These products only degrade when disposed into hot industrial composts, of which there are limited only few. In contrast, AirCarbon is able to degrade in natural environmental conditions, including in home compost, soil, and other environments. AirCarbon has been certified “Plastic-Free” by Oceanic Global and pass home, soil, and water compostability testing through TUV Austria, one of the world's leading end-of-life certification bodies.

An estimated 17.6 billion pounds of plastic enter the marine environment every year, resulting in government bans and restrictions on using single-use plastics around the globe. While there have been significant efforts to replace single-use plastics with other materials, implementation has been slow due to their cost structure, performance characteristics, or limited degradability.

After 19 years in development, Newlight has developed an innovative technology that overcomes those barriers - a natural, regenerative, carbon-negative material that utilizes air and methane or CO₂ gas (instead of petroleum) as feedstock inputs.

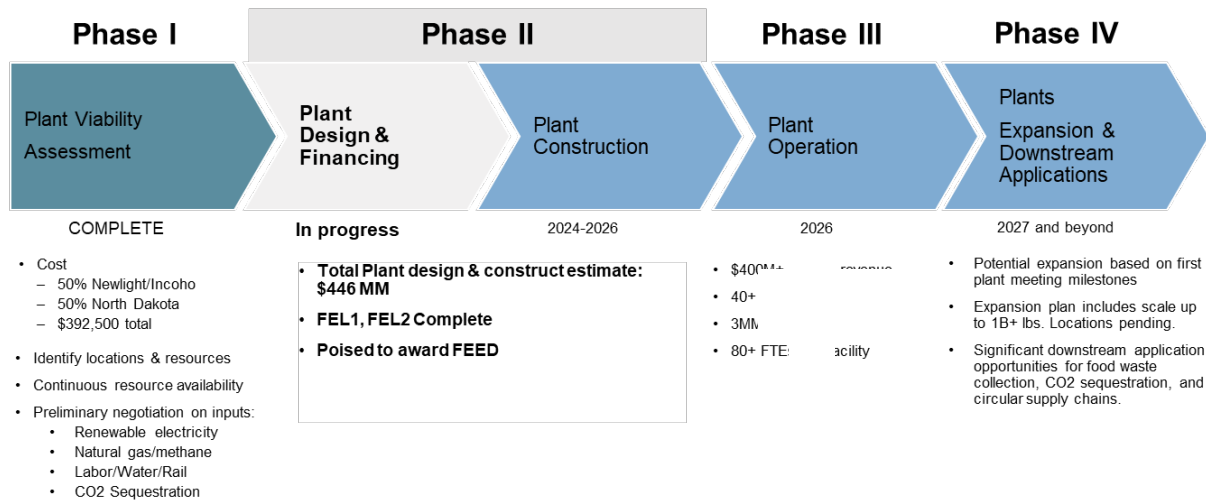
AirCarbon is also known as PHB, and PHB is produced throughout nature, including by ocean-based micro-organisms that consume carbon in the form of methane or CO₂. AirCarbon is environmentally degradable because microorganisms in the environment recognize it as a natural food source. It melts for forming products (at around 350^{oF}) and is durable in hot and cold conditions (also making it SGS-certified dishwasher-safe).



Newlight's California Headquarters & Air Carbon cutlery

Project Description - High Level Project Approach:

The objective is to construct and operate an AirCarbon plant and the approach is designed into four phases (see below). While Newlight has signed an agreement to build its next plant in Ohio, Phase I was focused on understanding the viability of where to locate a future plant in North Dakota. Upon approval by Newlight's board, we are prepared to execute FEL3/FEED phase in order to prepare for detailed design and construction completion in 2026.



The progress during and since the completion of Phase I includes the following:

- **Engineering and Design:** The FEL2 (30%) design has been completed for the Ohio site and the ISBL process design will be very similar for the North Dakota site. Preliminary FEL3/FEED design work has commenced. Newlight has been investing and will continue to invest in this effort through the CSEA evaluation period, showing a commitment to the development of the project in North Dakota.
- **Site Selection:** The evaluation of site options across western ND was narrowed down to be around the Marley Crossing/Savage Services operations to support transportation logistics. We have not yet selected a specific site. Newlight has signed a contract with a site in Ohio but is still very interested in developing a second site in North Dakota. Newlight will enlist local contractors to support finalizing a site if this loan request is accepted.
- **Equipment & Labor:** Some of the equipment and infrastructure needed for the plant are long lead time, particularly the large complex reactor vessels, electrical gear, waste water treatment plant, etc. We plan to leverage the logistics practices for the adjacent facilities in order to plan for deliveries to our site. We will optimize use of local firms for goods and services supply. Newlight will leverage the FEED contractor for conducting labor studies and equipment deliveries throughout FEED execution.
- **Infrastructure Requirements, Key Cost Drivers & Implications for Total Installed Cost Estimation:**
Two key cost drivers with a high degree of sensitivity and risk for AirCarbon production are electricity and gas costs. The estimate of these two drivers out of Phase I were at an FEL1 accuracy due to market variability and greenfield infrastructure options still under development. Understanding and mitigating buildout challenges will be critical in the success of the project.

We also have interest in the State's carbon sequestration strategy and will be evaluating the options to drive value.

- **State Support:** Thus far, the North Dakota Commerce Department has been very helpful in listening our requirements and providing early FEED funding. The Marley Crossing site is a greenfield location that does not yet have established infrastructure to deliver the power, gas, and water to our specifications. Understanding and participating in the development and availability (e.g., reliability and timing) of that infrastructure is an important step to the success of the project.

Methodology

A milestone-based gated approach to perform projects aligns project objectives with the business needs to execute the projects in the most efficient way. The gates methodology is a process of progressive

definition of the project. This process is based on a planned and standardized series of reviews (gates) at the end of each phase.

This breakdown in phases or stages and the normalized control points at each end is an improvement of the classic approach, where the organizations may have points of control, but they are not as standardized as the ones that this technique offers. Gates methodology is consistent with Construction Industry Institute Best Practices.

Based on the progress made in Phase I, Phase II will have two parts. The first part will have several goals that we will organize into milestones to review at specific “gates” that include the following:

Engineering and Design: Manage FEED Contractor to update the engineering design to include the option of operating in the ND climate 7/24/365, completing FEED to include changes that incorporate the North Dakota operating climate. Identifying and requisition key long lead equipment and activities during FEL3 will minimize overall project schedule. The inside battery limits engineering design effort in many ways is common to the Ohio and Marley Crossing developments which benefits the overall project schedule. The initial grant will cover the FEED component for the installation in North Dakota. We are sharing the engineering costs with a focus on the infrastructure requirements for the North Dakota installation.

This methodology drives a common base plant design (exception is the cold weather design components specific to North Dakota), thus sharing the engineering design across the two facilities.

- **Site Layout :** The management team visited the Trenton area and noted the appeal of a few specific sites in the Marley Crossing area that could meet requirements with the proposed infrastructure build out. In Phase II we plan to narrow down and focus on the optimal site and developing plot plans and general arrangement drawings that are aligned across the two sites for inside battery limits.
- Validate equipment deliveries, cost estimate and current labor studies for the region.
- **Finalize Infrastructure Requirements & Implications for Economic Evaluation:** In FEED we plan to focus on the key cost drivers (e.g., electricity, gas, water & carbon sequestration) and the supporting infrastructure costs to better refine overall economic evaluation. This includes working with and supporting the Trenton Infrastructure group to design win/win solutions for all stakeholders (e.g., companies locating at Trenton, County & State organizations).

An important example of this is power. Finding and/or developing a reliable, renewable power source that also meets economic targets is a critical success factor.

- **State Support:** As the project continues to progress, we will work with the local authorities and vocational programs to identify local contractors and training initiatives to support the project.

Anticipated Results:

We anticipate that completing FEED will provide us with the engineering plans and detailed infrastructure insights and other needed information to allow us to make a well-informed decision regarding the plant operations to meet targeted economics. We will continue to focus on refining the key value drivers (e.g., cost inputs) and mitigate any key risks. FEED work will include:

- **Engineering and Design:** Provide specific list of deliverables suitable to move forward into EPC. These deliverables will support both locations, Ohio and North Dakota, and will include climate-specific components.
- **Site Selection:** Site location and overall sit plan will be finalized early in FEED for North Dakota.
- **Equipment and Labor:** Labor costs and availability will be developed based on the most recent labor study. Preliminary quotes or firm quotes for 85% of equipment costs will have been received by the end of FEED.

Infrastructure Requirements & Implications to Total Installed Cost:

This will require more informed assessment of key operating inputs including assessing the reliability/availability timing, input quality (e.g., methane gas target of 90%) and cost (commodity and infrastructure) for the key operating inputs (e.g., electricity, gas and water including potable, cooling, and waste management). We anticipate and plan to support the Trenton Infrastructure group to design win/win infrastructure solutions for all stakeholders (e.g., companies locating at Trenton, County & State organizations). Finally, we anticipate identifying potential partners and strategies to support the State's carbon sequestration goals to further optimize our economics and ESG goals.

We will conduct meetings with and gain commitments from key infrastructure utility providers to validate timelines and delivery volumes that can support the project.

- **State & County Support:** During Phase II, the plan is to work with the ND Commerce Department to articulate any needs such that the State/County is aware of project status and can continue to support the ongoing project installation.

With the completion of the FEED scope, we believe the State will see that Newlight has demonstrated due diligence in defining the scope of the work in the region where it is to be constructed before moving into detailed engineering and construction. This will provide a level of comfort that the State can add Newlight and AirCarbon production to the State's portfolio of new vibrant, leading-edge technologies

and companies that are selecting ND and contributing to its Carbon Neutral goal. The output of the above work will produce a high-level work plan that considers, integrates and optimizes realization of Newlight's and the State's (e.g., infrastructure support) goals.

Facilities:

Owner facilities at the site location will be required upon mobilization to the active construction site.

Resources:

We will employ a number of resources but to a large part the following partners will be the focus:

- Newlight subject matter experts
- Burns & McDonnell Engineering
- Trenton Infrastructure partners (including ND State and the County)
- EERC (carbon sequestration expertise)
- Key ND equipment fabricators
- Subject matter experts and consultants

Other consultants or services to be used may include electricity pricing experts, site selection contractors, and legal advisors for purchasing and sales agreements and we will try to utilize ND experts where possible. Environmental consultants will be required to support project development and assist during reviews with the North Dakota Department of Environmental Quality. State organizations will be contacted with respect to permitting requirements and we will continue to work with the Commerce Department to best position the plant for success.

Techniques to Be Used, Their Availability and Capability:

We plan to utilize a number of techniques to complete the work effort as listed below.

- OSHA best practices
- Reliability and Maintainability analysis
- Construction Industry Institute Best Practices
- Advanced work packaging
- Continuous financial model update
- Labor Studies
- Continuous evaluation of risk profile (Risk management workshops)
- Logistics planning studies

If we recognize the need for additional capability the project team will include local contractors, legal support, and technical consultants prior to looking outside ND.

Environmental and Economic Impacts while Project is Underway:

Environmental impacts and risks will be identified in FEED and any mitigations needed will be delineated for the EPC contractor.

Ultimate Technological and Economic Impacts:

While the FEED phase of the project is to support development of EPC and infrastructure requirements of building an AirCarbon plant near gas facilities in North Dakota. The ultimate goal of the project is to create an entirely new industry based on a new way to utilize gas and energy. That new industry: AirCarbon products.

AirCarbon is expected to be able to compete favorably with traditional oil-based plastic as well as with other alternative polymers both in functionality and price with the “right” input cost structure. This assumes that we can produce AirCarbon with inputs sourced at the “right” cost, quality and reliability requirements that will allow us to successfully compete in the marketplace. If we produce AirCarbon at competitive levels, then we can expect continued economic impact growth from the planned plant as well as any potential expansion efforts based on market needs.

This effort will also create secondary benefits for North Dakota-based suppliers of gas, renewable wind energy, transportation, and other employers. And most importantly, it will create continued demand for the state’s plentiful carbon resources that cannot rely on interstate pipelines for delivery and instead use the gas in North Dakota to support the growth of its own value-added industrial base.

The infrastructure build-out will ultimately also support the entire Marley Crossing development, the companies that supply the inputs, and the region in general. The area will see development and employment from the plant, the construction, and the ancillary businesses surrounding the development through cost sharing and infrastructure development that may offset the ups/down economic cycles associated with the current carbon industry.

Once Phase II is successfully complete we will operate a plant that will employ 70-100 people directly, with many more that were involved in construction. This will spur secondary developments in the Williston/Trenton region, and the project has support from other development partners and the county economic development office.

Why the Project is Needed:

North Dakota’s Bakken region was blessed with plentiful oil and gas. Over time, the oil/gas ratio (OGR) has increased, and the North Dakota Pipeline Authority predicts that ratio to continue. They also predict that output may exceed pipeline capacity in the near future. It will be critical to the state and the energy sector to find “local” productive use for that amount of gas, and an industry that uses gas without reliance on limited and intra/interstate pipeline capacity is of great interest. Introducing AirCarbon production locally in the Bakken where that excess gas can be used to make an environmentally friendly, carbon-negative, ocean-safe plastic alternative is one logical solution.

This also supports the Governor’s 2030 Carbon Neutral target. Newlight will essentially sequester carbon in the product during its useful life. It is our intent to find a way to harness renewable power, and to sequester any carbon dioxide that is produced during AirCarbon production. Also, it provides a very

tangible product that people of all persuasions can touch and feel and understand the story of how forks, knives, spoons, and straws are helping an energy-producing state become carbon-neutral. AirCarbon made from North Dakota methane will represent a product that is biodegradable in nature and will not accumulate in the oceans.

Finally, our intent is for this to be a first plant and we intend to expand as the market for AirCarbon grows. For the plant under consideration in this application, which would provide 70-100 environmentally attractive jobs that provides North Dakotan's the opportunity to work for a leading technology company in a growing industry. As the company grows, so will the economic and social benefits to the state.

STANDARDS OF SUCCESS

The project will support the design and operations of an economically viable plant that meets Newlight's success criteria. Those criteria include:

- Safety in Construction and Operations
- Achieving a design that will meet economic performance thresholds.
- Engineering to meet specific North Dakota challenges.
- Confidence that when plant construction commences, the economics and infrastructure and delivery mechanisms (pipeline, waterline/s, or powerlines) are in place to meet the construction timelines with adequate lead times to alleviate any potential construction/operating delays.

If successful, Newlight will move to finance and build North Dakota's first AirCarbon plant. Developing an AirCarbon industrial base in North Dakota can support the state's energy sector by increasing demand for renewable energy, providing a new market for gas feedstocks (which supports further build out of gas gathering assets leading to a reduction in flaring) while promoting the state of North Dakota as a leader in innovative environmental stewardship.

To move the project into Phase III, Newlight needs to complete the engineering, construction, and commissioning.

Upon completion of engineering and design, Newlight will transition into the construction phase that includes:

- A significant number of indirect design, supply and construction jobs in North Dakota.
- A plant that will, when operational, will create 100 environmentally friendly jobs over the next five years.
- Increase in supplier revenues and jobs to support plant inputs, especially renewable energy, water, and gas/CO₂ feedstock and transportation costs.

BACKGROUND/QUALIFICATIONS:

Newlight Technology and Burns & McDonnell

Founded in 2003, Newlight is a nature-inspired biotechnology company based in California that is converting air and greenhouse gas into a biomaterial called AirCarbon®. Newlight uses a technology that is found in ecosystems throughout the world, including in the ocean, wherein naturally-occurring microorganisms consume air and greenhouse gas, including methane and carbon dioxide, through fermentation to produce a muscle-like material inside of their cells called PHB. PHB is an energy storage material made in most living organisms, from marine microorganisms to the roots of plants, and can be melted into shapes as a replacement for plastic. Newlight is the first company to directly transform greenhouse gases into PHB, a biomaterial that the company calls AirCarbon, at commercial scale. AirCarbon competes on performance with various grades of polypropylene, the second largest-volume plastic in the world. With a variety of potential industries to serve, Newlight's primary focus is on addressing ocean plastic pollution by displacing plastic in the foodware market, starting with straws, cutlery, and coated paper products. In addition to foodware, Newlight is also seeding expansion in automotive and fashion applications. Newlight launched its first commercial-scale AirCarbon production facility in 2020, and today Newlight's customers and partners include Shake Shack, Nike, Target, H&M, Ben & Jerry's, Sumitomo, US Foods, and Sysco, with millions of AirCarbon units delivered to consumers to date.

Burns & McDonnell is a family of companies bringing together an unmatched team of more than 13,500 engineers, construction and craft professionals, architects, planners, technologists and scientists to design and build our critical infrastructure. With an integrated construction and design mindset, we offer full-service capabilities. Founded in 1898 and working from 70 offices globally, Burns & McDonnell is ranked 7th on the 2023 annual survey of Top 500 Design Firms by Engineering News-Record (ENR) magazine and is 100% employee-owned.

Mark Herrema, CEO



Mark Herrema is the co-founder and CEO of Newlight Technologies. In 2003, Mark co-founded Newlight with Kenton Kimmel with a vision of using greenhouse gas as a resource to make high-performance sustainable materials. Newlight has been honored to receive industry recognition as “Biomaterial of the Year” by the Nova Institute, “Innovation of the Year” by Popular Science, and “Technology Pioneer” by the World Economic Forum. In 2016, Newlight was awarded the Presidential Green Chemistry Challenge Award by the U.S. Environmental Protection Agency. Mark graduated magna cum laude from Princeton University, and has since garnered 19 years of experience in process engineering, polymer functionalization, and strategic business development.

Kenton Kimmel, CTO



As CTO and co-founder of Newlight, Kenton has over 19 years of industrial experience in chemical, process, electrical, mechanical, and automation engineering. Kenton has been instrumental in the design, scale-up, and optimization of the company's biomaterial manufacturing technology, including the engineering, construction, commissioning, and optimization of the company's production lines. Prior to his work at Newlight, Kenton held a position in the In Vitro Microbiology Group at Allergan Pharmaceuticals where he conducted research on genetic markers and gene expression of potent neurotoxins for use in cosmetic surgery. Kenton graduated from Northwestern University with a Biomedical Engineering B.S.E degree, double specializing in Biomaterials & Biotechnology and Transport Processes & Tissue Engineering.

Evan Creelman, Chief Business Development Officer



Evan Creelman joined Newlight in 2006 and has been prominent in the creation of Newlight's extensive network of development and commercial partners. Evan now leads the company's business development efforts, and prior to joining Newlight, Evan worked with Mercer Management Consulting in the Airline, Retail, and Private Equity industries. Evan graduated cum laude from Northwestern University with a degree in Applied Mathematics & Economics, holds a master's in accounting from the University of California - Irvine, and is a Chartered Financial Analysis® (CFA).

Rob Clark, Corporate Project Director

More than 40 years' experience in project management as owner or contractor, in diversified international and regional project management, engineering and construction, with project sizes up to 30 billion dollars. Rob was VP-Project Director on a project awarded the Hydrocarbon Processing Petrochemical Project of the Year. Rob's projects have always been onshore, downstream, in the areas of refining, petrochemicals, power and environmental, with projects executed in Europe, Asia, North and South America. He has presented at conferences in Asia and the U.S. on EPC topics such as Front- End Engineering Design (FEED), Risk, Ethane and Ethylene, Site Selection and Construction Labor. He was active on the Construction Industry Institute Research Team for Modularization.

MANAGEMENT

Our partner Burns & McDonnell is a recognized expert in their field. Newlight has previous experience working with the firm and is confident in their management techniques.

Burns & McDonnell is a family of companies bringing together an unmatched team of more than 13,500 engineers, construction and craft professionals, architects, planners, technologists and scientists to design and build our critical infrastructure. With an integrated construction and design mindset, we offer full-service capabilities. Founded in 1898 and working from 70 offices globally, Burns & McDonnell is ranked 7th on the 2023 annual survey of Top 500 Design Firms by Engineering News-Record (ENR) magazine and is 100% employee-owned.

The ability to manage a project of this size requires the team to be able to deliver each stage of the project in a structured, stepwise manner. The project shall be progressed in a proven, industry standard stage gated process, consistent with the Construction Industry Institute Best Practices. The approach will continuously develop further quantification and reduction of risk, with refinement and development of cost and schedule to ensure project certainty.

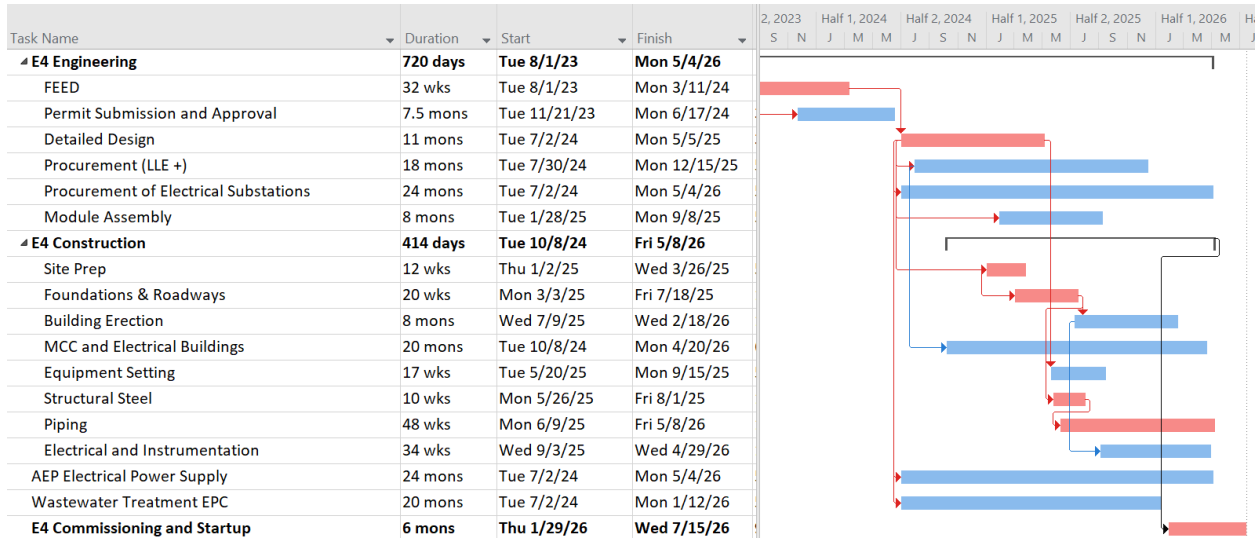
The project team shall combine global best practices, reviewing past lessons learned providing the team with inputs to craft a fit for purpose project execution strategy.

As Newlight has developed they have assembled a multi-cultural project execution team with experience in projects up to \$30 billion dollars.

TIMETABLE

Our proposal aligns the already completed FEL1 and FEL2 engineering and design work to build this plant through a set of logical milestones that will align with the project’s reporting and funding through CSEA. Funding will be used to contract our engineering firm, Burns & McDonnell, and support Construction and Commissioning of the North Dakota plant as well as support our work to develop the Marley Crossing infrastructure plans.

The below Gantt chart shows the detailed engineering milestone plan and timing.



BUDGET

Please use the table below to provide an **itemized list** of the project’s capital costs; direct operating costs, including salaries; and indirect costs; and an explanation of which of these costs will be supported by the financial assistance and in what amount. The budget should identify all other committed and prospective funding sources and the amount of funding from each source. **Please feel free to add columns and rows as needed.** Higher priority will be given to projects with a high degree of matching private industry investment.

Project Associated Expense	NDIC Grant	NDIC Loan	Applicant’s Share (Cash)	Other Project Sponsor’s Share	Total
FEED	\$4,185,625 (2022 grant)		\$12,814,375		\$17MM
Detailed Engineering & LLE		\$59 MM	\$59 MM		\$118 MM
Procurement & Construction		\$91 MM	\$207 MM		\$298 MM
Commissioning & Start Up			\$13 MM		\$13 MM
Total	\$4,185,625 (2022 grant)	\$150,000,000	\$291,814,375		\$446,000,000

These estimates are based on experience in estimating and quoting similar projects.

CONFIDENTIAL INFORMATION

A person or entity may file a request with the Commission to have material(s) designated as confidential. By law, the request is confidential. The request for confidentiality should be strictly limited to information that meets the criteria to be identified as trade secrets or commercial, financial, or proprietary information. The Commission shall examine the request and determine whether the information meets the criteria. Until such time as the Commission meets and reviews the request for confidentiality, the portions of the application for which confidentiality is being requested shall be held, on a provisional basis, as confidential.

If the confidentiality request is denied, the Commission shall notify the requester and the requester may ask for the return of the information and the request within 10 days of the notice. If no return is sought, the information and request are public record.

Note: Information wished to be considered as confidential should be placed in separate appendices along with the confidentiality request. The appendices must be clearly labeled as confidential. If you plan to request confidentiality for **reports** if the proposal is successful, a request must still be provided.

To request confidentiality, please use the template available at <http://www.nd.gov/ndic/CSEA-app-doc-infopage.htm>.

PATENTS/RIGHTS TO TECHNICAL DATA

Any patents or rights that the applicant wishes to reserve must be identified in the application. If this does not apply to your proposal, please note that below.

STATE PROGRAMS AND INCENTIVES

As mentioned, Phase 1 of the project was provided with 50% funding via the Renewable Energy Program. The total project cost was \$392,500, of which the state funded 50% or \$196,250. This Phase was completed in January 2022, resulting in a positive feasibility with 5 locations presented and evaluated. Of these, the Marley Crossing/Trenton site adjacent to the Savage Services location was the top site.

Newlight also received a CSEA grant in 2022 to support FEED engineering for an AirCarbon plant in North Dakota. The total project FEED cost was forecasted at \$8,371,250 of which the state grant will fund 50% or up to \$4,185,625. This work has not yet commenced and is expected to be initiated in 2023 with completion in 2024. We are requesting another \$150MM for the project in North Dakota. While the first plant is planned to be constructed in Ohio, we are confident we can construct an additional plant in North Dakota.

These are the only state programs that Newlight has participated in.

Appendix – Letters of Support



Wellspring Hydro
PO Box 884
Williston, ND 58802-0884
701-770-8682

To ND Clean Sustainable Energy Authority,

It is our understanding that NewLight Technologies, Inc. of Huntington Beach, CA is applying for CSEA funding. Wellspring Hydro would like to extend this letter of support for their project on the merits of their technology and the co-beneficial nature of their project to ours and others who are looking to build new petro-chemical facilities in Northwest North Dakota.

We applaud their proposed use of natural gas in Northwest North Dakota and add value to our natural gas here instead of sending it out of the state. The use of that gas here opens the door for additional oil development which is critical for the future of North Dakota. They are also creating products that reduce our dependence on single use plastics which don't break down easily in the environment, their known to the earth products do break down naturally in the environment and are made in a carbon negative way.

They will provide 50-70 new jobs that never existed before which will help us diversify our economy and make us less dependent on the whipsaw effect of the ups and downs of oil prices. They will also likely support our company, Wellspring Hydro, by purchasing products we make at our chlor alkali facility which highlights the importance of having a reliable, stable, and secure supply of commodities such as caustic soda and hydrochloric acid. We urge you to support their project with funding from the Clean Sustainable Energy Authority.

Yours truly,



Steve Kemp
Founder
Wellspring Hydro
stevek@wellspringhydro.com
701-770-8682



Feb 23, 2022

Al Anderson
Director, Clean Sustainable Energy Authority
State Capital, 14th Floor
600 E. Boulevard Avenue Dept 405
Bismarck, ND 58505-0840

Director Anderson,

Williston Economic Development is delighted to support the New Technologies Plant project as submitted to CSEA.

Diversification has always been a key component of our economic development efforts. A project of this magnitude that is a carbon-negative enterprise, utilizes local feedstock of natural gas and will support 50-70 permanent full-time jobs is a winning formula for the community and the region.

In closing, the potential benefit to our community in both economic growth and quality of life is great. On behalf Williston Economic Development, I urge you to fully support their efforts.

Best Regards,

A handwritten signature in black ink, appearing to read "Shawn Wenko".

Shawn Wenko
Executive Director
Williston Economic Development



PO Box 1047
3200 West Holly Street
Sidney, MT 5927
Phone: (406) 488-1602
Fax: (406) 488-6524
www.Lyrec.com

2/28/2022

To whom it may concern,

Lower Yellowstone Rural Electric Cooperative (LYREC) has provided electric service to rural America for the past 85 years. The purpose of the cooperative was to provide electrical service to rural America and support the residential farms, commercial businesses, and communities in our service territory, which includes both North Dakota and Montana. One of the guiding principles of a cooperative is to support the communities and members we serve and help them succeed.

In reviewing the information provided by NewLight Technologies, Inc. of Huntington Beach, CA, and after several discussions with their representative, LYREC plans to support the project they are proposing. NewLight Technologies, Inc. has developed an impressive product that is conscious of the environmental impact and will decrease the single use plastics.

LYREC feels the economic impact, both short and long term, makes this a promising business to support. This project will not only effect the membership of LYREC in North Dakota, but also across the state line into Montana.

NewLight Technologies, Inc. will likely bring jobs and economic growth to the area, along with diversity. As an electrical company, we support projects that allow stability in the electric market and promote the use of resources in our region.

We urge the ND Clean Sustainable Energy Authority to support NewLight Technologies, Inc. as they apply for funding.

Sincerely,

Jason A. Brothen
CEO, Lower Yellowstone Rural Electric Cooperative



P.O. Box 2747
Fargo, ND 58108

December 10, 2020

North Dakota Industrial Commission
Renewable Energy Council
c/o Karlene Fine
Industrial Commission
State Capitol 14th Floor
600 E. Boulevard Ave. Dept. 405
Bismarck, ND 58505-0840

Dear Ms. Fine,

RE: Support for EERC proposal by Incho Advanced Materials to examine the viability of utilizing excess gas feedstock in North Dakota and determine optimal locations and partners for production of bio-degradable PIIB.

Xcel Energy is pleased to support Incho Advanced Materials' application to the Renewable Energy Council to assess the viability of introducing a new industry to North Dakota that would create additional demand for the state's energy and renewable energy sectors.

Introducing a new technology-based industry that complements the existing energy industry and infrastructure is a long-term goal of the industry and the State and would also generate new energy sector jobs in the state as well as help the State in meeting key stated goals (e.g., flaring reduction). A new industrial base that manufactures materials that can have a positive impact on the environment is also a benefit of this project.

Due to this favorable impact to the state and its energy sector, we support this application.

Sincerely,

A handwritten signature in blue ink, appearing to read 'Mark Nisbet'.

Mark Nisbet
Xcel Energy
North Dakota Principal Manager
2302 Great Northern Drive, Fargo, ND 58102
P: 701.241.8607 C: 701.371.5255 F: 701.241.8682
E: mark.nisbet@xcelenergy.com