NewCarbon Feedstocks, LLC
1057 Chadwick Ct.
Aurora, IL 60502
www.newcarbon.energy

July 31, 2024
Mr. Reice Haase
Deputy Executive Director
North Dakota Industrial Commission
State Capitol – 14th Floor
600 East Boulevard Avenue, Department 405
Bismarck, ND 58505-0840

Dear Mr. Haase:

Subject: ACS NewCarbon RNG Project

NewCarbon Feedstocks, LLC ("NewCarbon") is pleased to submit the subject proposal to the North Dakota Industrial Commission Renewable Energy Program.

NewCarbon, a clean energy infrastructure company who develops, owns and operates infrastructure that delivers lifecycle carbon intensity reduction for North America's top industrial, agricultural and energy companies, is collaborating with American Crystal Sugar on the development of a renewable natural gas (RNG) project to harvest biogas from byproducts of sugar beet refining via anerobic digestion, upgrade the gas, and deliver high-quality low-carbon RNG to end users. Successful execution of this Project will result in the creation of new renewable energy jobs, wealth and tax revenues for North Dakota. It will also decrease the carbon intensity of a major North Dakota agricultural cooperative and increase sustainability of a key North Dakota industry thereby preserving existing jobs and production levels.

NewCarbon is committed to completing the Project on schedule and within budget should the Commission approve the requested grant.

The $100 application fee for this proposal is provided through ACH Confirmation Number 503625600. If you have any questions, please contact me by telephone at (312) 718-9519 or by email at omar.khayum@newcarbon.energy.

Sincerely,

Digitally signed by
Omar Khayum
Date: 2024.07.31
12:27:03 -05'00'

Omar Khayum, President
NewCarbon Feedstocks, LLC

Renewable Energy Program

North Dakota Industrial Commission

Application

Project Title: ACS NewCarbon RNG Project

Applicant: NewCarbon Feedstocks, LLC

Principal Investigator: Matthew Moshier

Date of Application: July 31, 2024

Amount of Request: $455,000

Total Amount of Proposed Project: $930,000

Duration of Project: 12 months

Point of Contact (POC): Omar Khayum

POC Telephone: (312) 718-9519

POC Email: omar.khayum@newcarbon.energy

POC Address: 1057 Chadwick Ct., Aurora, IL 60502

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ABSTRACT

NewCarbon, a clean energy infrastructure company who develops, owns and operates infrastructure that delivers lifecycle carbon intensity reduction for North America's top industrial, agricultural and energy companies, is collaborating with American Crystal Sugar Company on the development of a renewable natural gas (RNG) project to harvest biogas from byproducts of sugar beet refining via anerobic digestion, upgrade the gas, and deliver high-quality low-carbon RNG to end users.

Objective: The Project objective is to conduct planning and feasibility activities over 12 months that will study sizing and integration of a renewable natural gas (RNG) project with American Crystal Sugar's Hillsboro, North Dakota beet sugar processing facility. The scope of the planning and feasibility activities include market analysis, community outreach and engagement, pre-FEED engineering study, feasibility studies to determine the availability and cost of utility feedstocks, financial model development and pipeline routing due diligence. **Expected Results:** Successful execution of this Project will support the Renewable Energy Program's (REP's) mission to promote the growth of North Dakota's renewable energy industries through research, development, marketing, and education. Upon completion of the 12-month Project duration, NewCarbon will decide whether to progress to a FEED study and subsequent

development activities based upon meeting the following measurable criteria: (1) signed non-binding customer term sheets, (2) budgetary estimate from an EPC contractor based on the pre-FEED, (3) development of a community benefits plan, and (4) feasibility assessment of the technology achieving a TRL 9. Once operational, the proposed Project will result in the creation of new renewable energy jobs, wealth and tax revenues for North Dakota. It will also decrease the carbon intensity of a major North Dakota agricultural cooperative and increase sustainability of a key North Dakota industry thereby preserving existing jobs and production levels. When it is fully operational the ACS NewCarbon RNG Project will produce approximately 300,000 MMBTU per year of low carbon intensity RNG that will satisfy emerging Midwest low carbon fuel standards (LCFS) and provide for a value-added derivative biofuel suitable for commercial and industrial natural gas customers. The Project will create an estimated 50-75 temporary (12-18 months) construction, engineering, and fabrication jobs and 3-5 new permanent facility/operations jobs. The Project represents a novel integration of sugar beet refining, anaerobic digestion, biogas upgrading and gas delivery which can be replicated at other North Dakota agricultural feedstock and sugar beet processing operations. **Duration:** 12 months, with an anticipated start date of November 1, 2024. **Total Project Cost:** $930,000 with $455,000 from the North Dakota Industrial Commission Renewable Energy Program and $475,000 from NewCarbon Feedstocks, LLC. **Participants:** NewCarbon Feedstocks, LLC and American Crystal Sugar Company.

PROJECT DESCRIPTION

Objectives: The Project objective is to conduct planning and feasibility activities over 12 months that will study sizing and integration of a renewable natural gas (RNG) project with American Crystal Sugar's Hillsboro, North Dakota beet sugar processing facility. The scope of the planning and feasibility activities include market analysis, community outreach and engagement, pre-FEED engineering study, feasibility studies to determine the availability and cost of utility feedstocks, financial model development and pipeline routing due diligence. Particular emphasis will be placed on community outreach and public

engagement activities that will support improved understanding of stakeholder concerns, community attitudes, and public acceptance of RNG.

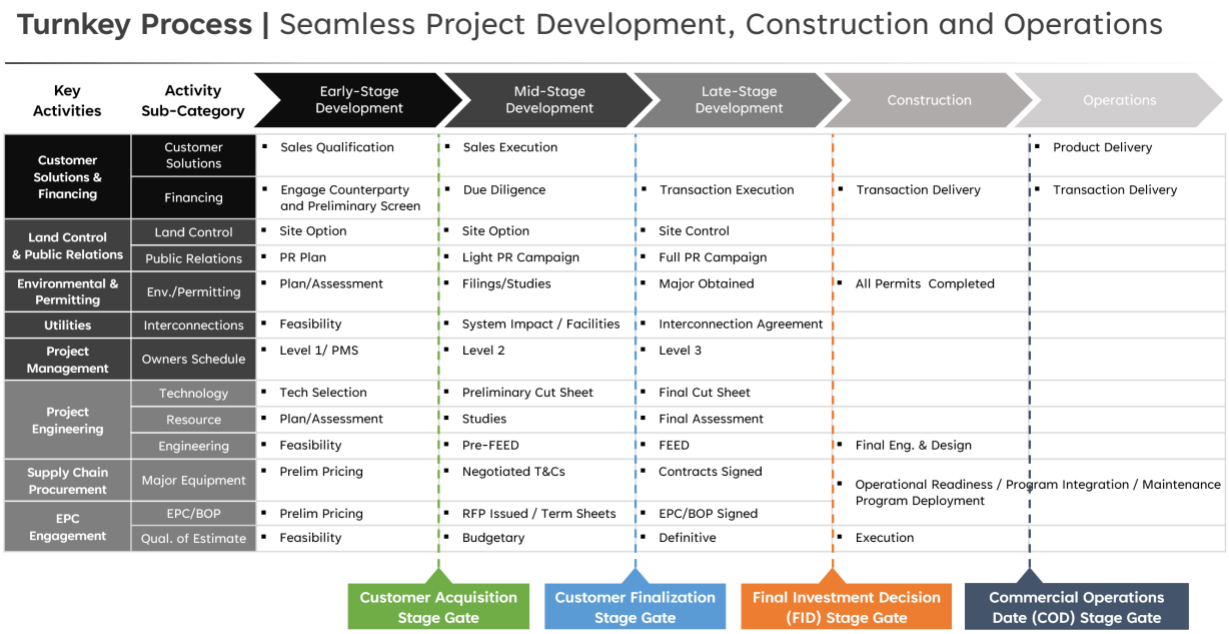
Sugar beet refining is the production of sugar (sucrose) from sugar beets. The process generates significant quantities of both solid and liquid organic byproducts. (Natalia Mioduszewska, 2018) Byproducts of the sugar beet refining process, including sugar beet pulp and sugar beet tailings, are currently used for cattle feed or land applied for beneficial use. This Project will evaluate the design of an industrial scale system to convert these byproducts into raw biogas using anaerobic digestion. The process of anaerobic digestion reduces the amount of methane released during the decomposition of the organic matter and does not reduce the nitrogen and phosphorus nutrient levels. The raw biogas is subsequently upgraded to natural gas pipeline specification which results in lower carbon intensity natural gas when compared to fossil fuel-derived natural gas (Francisco López, Lago Rodríguez, Faraji Abdolmaleki, Galera Martínez, & Bello Bugallo, 2024), hence the term renewable natural gas (RNG). This lower carbon intensity RNG is then delivered to customers either through existing natural gas pipelines or via trucked compressed natural gas. The residual organic matter from the anaerobic digestion process, digestate, is subsequently recycled for agricultural use as a fertilizer. Although sugar production is based on seasonal processing of beets, fresh input substrates can be stored and fed into digesters to maintain a year-round, consistent, biogas production. When it is fully operational the ACS NewCarbon RNG Project will produce approximately 300,000 MMBTU per year of low carbon intensity RNG. This Project will provide a clean energy source from agricultural byproducts and provide a pathway for low carbon competitive sugar production from sugar beets.

Methodology: The Project is organized into eight major tasks. NewCarbon will employ its turnkey project development process to ensure technical, development, and financial

feasibility (see **Error! Reference source not found.**). This process provides multiple stage gates to ensure the Project

follows a rigorous governance process to maximize project viability and risk reduction. During the 12-month duration of the Project, NewCarbon will complete all early-stage development activities and certain mid-stage development activities, such as the pre-FEED study, pursuant to the process in Figure 1 which are vital to producing realistic cost and schedule information and further validate feasibility of the proposed technology and project.

Figure 1: NewCarbon Turnkey Project Development Process



Task 1.0: Market Analysis. The objective of this task is to obtain signed, non-binding customer term sheets from customers for long-term offtake of the RNG product. In terms of market demand for RNG, North Dakota has in-state Biofuels and Sustainable Aviation Fuels facilities which require RNG low carbon feedstock such as RNG to achieve their carbon intensity targets. Many out of state entities are also seeking RNG to meet voluntary or compliance-driven sustainability targets. The scope for Task 1 includes sales and marketing efforts, financial analysis, and execution of commercial transactions. Activities involve developing sales strategies for Renewable Natural Gas (RNG), identifying and reaching

out to prospective customers, engaging with customers to discuss terms and conditions for long-term offtake of RNG and preparing and drafting commercial and legal documents to memorialize offtake agreements.

Task 2.0: Property Due Diligence. The goal of this task is to determine the legal and environmental suitability of the RNG plant site. The scope includes conducting a property title search and assessing the site for any legal or environmental issues that could affect the Project. The project team will optimize the equipment and general plant arrangement, installation, and interconnecting piping of the RNG processing facilities within the existing Hillsboro, North Dakota beet sugar processing facility while anticipating interconnection with utilities adjacent to the Project site.

Task 3.0: Community Outreach and Engagement. This task aims to deliver maximum value to the North Dakota community through effective engagement and communication. The community benefits plan will address community and labor engagement and discuss the creation of high-quality jobs and development of a skilled workforce. Activities include designing and implementing a community outreach strategy and engaging with local stakeholders to communicate Project benefits and gather stakeholder input.

Task 4.0: Engineering Services. The objective is to conduct preliminary front-end engineering and relevant studies to ensure the viability of the facility for RNG production. The scope includes pre-FEED Engineering Study, Lifecycle Assessment (LCA), Biogas Quality Study, Plant Permit Matrix, and Pipeline Permit Matrix. The project team will identify and quantify major material and energy inputs and outputs for a biogas production system. Design analysis includes pressed pulp and tailings reception and washing, size reduction requirements, and design requirements for anaerobic digestion based on high solids content.

Task 5.0: Developer Services. The goal is to perform feasibility studies to determine the availability and cost of utility feedstocks/inputs into the RNG project. The scope includes Electrical, Natural Gas, Wastewater, and Feedwater Interconnection Feasibility.

Task 6.0: Project Pro-Forma/Budget. This task aims to develop a pro-forma model to support offtake pricing and construction financing needs. The pro-forma will leverage the data from the pre-FEED study, biogas and methane production yields, interconnection, land, and financing costs.

Task 7.0: Site Acquisition Planning. The objective is to plan site acquisition for pipeline routing to the interstate pipeline interconnection location.

Task 8.0: Sourcing Project Funding. This task focuses on identifying other funding sources and federal, local, and state tax incentives for renewable natural gas.

Anticipated Results: Successful execution of this Project will support the Renewable Energy Program's (REP's) mission to promote the growth of North Dakota's renewable energy industries through research, development, marketing, and education. Upon completion of the 12-month Project duration, NewCarbon will decide whether to progress to a FEED study and subsequent development activities based upon meeting the following measurable criteria: (1) signed non-binding customer term sheets, (2) budgetary estimate from an EPC contractor based on the pre-FEED, (3) development of a community benefits plan, and (4) feasibility assessment of the technology achieving a TRL 9. Once operational, the proposed Project will result in the creation of new renewable energy jobs, wealth, and tax revenues for North Dakota. The proposed project will also decrease the carbon intensity of a major North Dakota agricultural cooperative and increase sustainability of a key North Dakota industry thereby preserving existing jobs and production levels. When it is fully operational the ACS NewCarbon RNG Project will produce approximately 300,000 MMBTU per year of low carbon intensity RNG that will satisfy emerging Midwest low carbon fuel standard (LCFS) and provide for a value-added derivative biofuel suitable for commercial and industrial natural gas customers. The Project will create an estimated 50-75 temporary

(12-18 months) construction, engineering, and fabrication jobs and 3-5 new permanent facility/operations jobs. The Project represents a novel integration of sugar beet refining, anaerobic digestion, biogas upgrading, and gas delivery which can be replicated at other North Dakota agricultural feedstock and sugar beet processing operations.

Facilities: NewCarbon will be working directly with a large-scale EPC contractor as well as other subcontractors with significant facilities and capabilities for scale up. The NewCarbon team has developed relationships across the energy, engineering, and construction sectors and will augment the NewCarbon capabilities as needed. Using lessons learned from similar pilot projects and analysis and design of the Project site, the project team will determine the feasibility of sugar beet pressed pulp and tailings as a substrate for anaerobic digestion at a commercial scale. During this Project, NewCarbon will be working directly with American Crystal Sugar Company to ensure clear and consistent communication between the two organizations.

Resources: No equipment is expected to be purchased during the initial 12-month planning and feasibility stage. The project participants control the Project and have effective control of the land.

Techniques to Be Used, Their Availability and Capability: The proposed team has committed to the Project and has ensured the availability of key personnel for the time frame of this Project. Any and all relevant publicly available data will be used for the Project. In addition to public resources, NewCarbon has engaged a technology licensor/ equipment provider that has completed and operates a similar project in the EU. The lessons learned from this project is expected to significantly improve the project outcomes.

Environmental and Economic Impacts while Project is Underway: There will be no environmental impact during the initial 12-month planning and feasibility stage. During operations, the RNG project will avoid methane emissions from decomposing sugar beet pulp and tailings while producing low carbon intensity fuel for industry in North Dakota and surrounding regions. Funding through NDIC will help

offset initial development costs of RNG projects in the North Dakota agricultural sector and help develop a potential roadmap for successful project execution of RNG projects at scale.

Ultimate Technological and Economic Impacts: The team believes that as more RNG projects are developed, the costs of the technologies employed will continue to fall and projects such as this will become more economically, socially, and environmentally beneficial. Sugar beet byproducts provide significant potential for RNG production due to high sucrose levels, stable yields across seasons, high dry matter yield, and strong substrate characteristics that stabilize the microbial conversion process. The Project represents a novel integration of sugar beet refining, anaerobic digestion, biogas upgrading and gas delivery which can be replicated at other North Dakota agricultural feedstock processing operations. The Project will create an estimated 50-75 temporary (12-18 months) construction, engineering, and fabrication jobs and 3-5 new permanent facility/operations jobs in North Dakota. The use of sugar beet byproducts for RNG production will contribute to the prosperity of sugar beet farmers and their communities in the North Dakota agricultural landscape.

Why the Project is Needed: This Project will be key to increasing momentum for RNG deployment in the North Dakota agricultural sector. North Dakota is the #2 producer of sugar beets in the United States (ND Department of Agriculture), and this Project is a critical enabler to preserving existing jobs and production levels in this industry while generating information and knowledge that will have the highest probability of bringing new renewable energy companies and industry investment to North Dakota. This Project will address a number of technical and stakeholder needs which can be replicated at other North Dakota agricultural feedstock and sugar beet processing operations. In the technical realm, there are questions about how sugar beet and other agricultural byproducts companies can integrate their operations with anaerobic digestion and subsequent gas upgrading. In the area of public perception, the concept of RNG deployment in North Dakota has been gaining traction and there is an opportunity to educate the public about the beneficial role that the government and private sector play in leveraging

RNG as a means of using our existing and robust natural gas infrastructure to decarbonize our local economy. The technical development and community benefits plan scope in our Project plan will be valuable to all stakeholders as North Dakota continues to pursue carbon reduction strategies and diversify its energy sector. Additionally, the proposed project creates a pathway for low carbon intensity agricultural products allowing North Dakota's agricultural sector to produce products that meet evolving consumer demand.

STANDARDS OF SUCCESS

Upon completion of the twelve-month Project duration, NewCarbon will decide whether to progress to a FEED study and subsequent development activities based upon meeting the following measurable criteria: (1) Signed non-binding customer term sheets, (2) budgetary estimate from an EPC contractor based on the pre-FEED, (3) development of a community benefits plan, and (4) feasibility assessment of the technology achieving a TRL 9. Successful execution of this Project will support the Renewable Energy Program's (REP's) mission to promote the growth of North Dakota's renewable energy industries through research, development, marketing, and education. The proposed Project will result in the creation of new renewable energy jobs, wealth and tax revenues for North Dakota. The project will also decrease the carbon intensity of a major North Dakota agricultural cooperative and increase sustainability of sugar beets, a key North Dakota and US industry, thereby growing existing jobs and production levels.

BACKGROUND/QUALIFICATIONS

NewCarbon will lead and oversee all proposed Project activities. The Principal Investigator (PI) is Matt Moshier (NewCarbon Head of Engineering) who has more than ten years of energy project execution and development experience across the conventional and clean energy sectors, and has completed over $3 billion in capital development, execution, and maintenance work at BP, Williams and TC Energy. The Business Point of Contact (POC) is Omar Khayum (NewCarbon Founder and CEO) who has over 15 years

of experience in the energy domain. Prior to founding NewCarbon, Omar served as the CEO of Annova LNG and held executive and leadership roles at TC Energy, Constellation Energy and Exelon Corporation.

NewCarbon develops, owns, and operates infrastructure that delivers lifecycle carbon intensity reduction. We do this through fit-for-purpose solutions that integrate seamlessly across our customers' value chains. NewCarbon's turnkey infrastructure process makes it easier for customers to reduce lifecycle carbon intensity so they can remain focused on their core businesses.

American Crystal Sugar Company is owned by nearly 2,800 shareholders who raise approximately one-third of the nation's sugar beet acreage in the Red River valley of Minnesota and North Dakota. As the largest beet sugar producer in the United States, the company utilizes innovative farming practices, low-cost production methods, and sales and marketing leadership to produce and sell about 15 percent of America's sugar.

MANAGEMENT

NewCarbon will oversee all tasks, schedule regular internal and external meetings with project participants and contractors and ensure that the Project is conducted using industry best practices in accordance with the project plan (budget, schedule, deliverables, and milestones) and is meeting quality objectives. NewCarbon will keep all partners informed of Project progress, coordinate activities as necessary for the execution of a successful project and will be responsible for timely submission of all project deliverables and transfer of data and products to the project team.

Key Roles:

NewCarbon Feedstocks, LLC: Provides Project director resources, manages the overall Project execution and oversees the contractors and will lead origination effort to sign non-binding term sheet(s) with customers for long-term sale of the RNG.

American Crystal Sugar Company: Provides site specific data and volume and composition of sugar beet byproducts that will feed the anaerobic digestion process.

Contractors: Community Benefits Consultant, Land Control, Environmental/Permitting Consultant, Life Cycle Assessment, Engineering/EPC, Electrical/Water/Pipeline Interconnect Consultant, Financial Modeling Consultant, and OEMs.

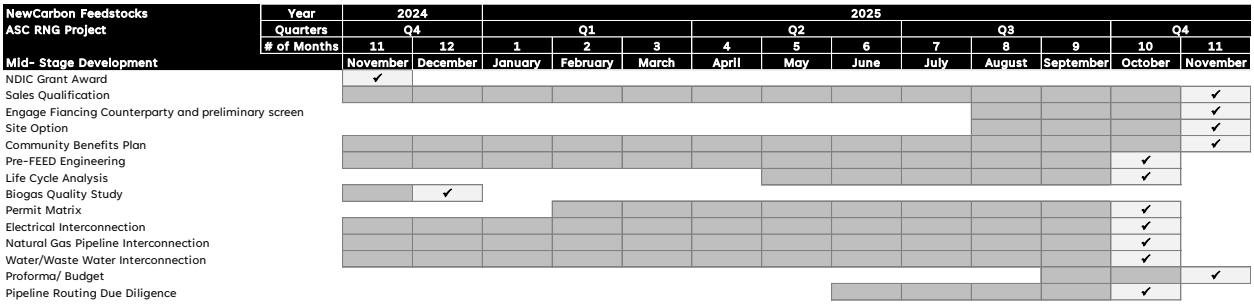
Project Duration (12-Month) Go/No-Go Evaluation Point: NewCarbon will decide whether to progress to FEED/Mid-Stage development phase based on the End of Project Goal (SMART).

End of Project Goal: Upon completion of the 12-month Project duration, NewCarbon will decide whether to progress to a FEED study and subsequent development activities based upon meeting the following measurable criteria: (1) Signed non-binding customer term sheets, (2) budgetary estimate from an EPC contractor based on the pre-FEED, (3) development of a community benefits plan, and (4) feasibility assessment of the technology achieving a TRL 9.

TIMETABLE

This Project is proposed to be performed over a 12-month period, with an anticipated start date of November 1, 2024. Quarterly progress reports will be submitted within 30 days after the end of each calendar quarter. **Error! Reference source not found.** depicts the proposed schedule.

Figure 2: ACS NewCarbon RNG Project Schedule



BUDGET

The total estimated cost for the proposed work is $930,000, as presented in Table 1. NewCarbon requests $455,000 from the North Dakota Industrial Commission Renewable Energy Program to be matched with $475,000 from NewCarbon Feedstocks, LLC. Budget notes can be found in Appendix D.

Table 1: ACS NewCarbon RNG Project Budget

Project Associated Expense	NDIC's Share	Applicant's Share (In-Kind)	Total Project
Labor (Salaries + Fringe Benefits)		$475,000	$475,000
Travel	$22,000		$22,000
Supplies	$5,000		$5,000
Task 1.0: Market Analysis	$25,000		$25,000
Task 2.0: Property Due Diligence	$5,000		$5,000
Task 3.0: Community Outreach and Engagement	$40,000		$40,000
Task 4.0: Engineering Services	$265,000		$265,000
Task 5.0: Developer Services	$33,000		$33,000
Task 6.0: Project Pro-Forma/Budget	$15,000		$15,000
Task 7.0: Site Acquisition Planning	$40,000		$40,000
Task 8.0: Sourcing Project Funding	$5,000		$5,000
Total	**$455,000**	**$475,000**	**$930,000**

CONFIDENTIAL INFORMATION

No confidential information is included in this proposal.

PATENTS/RIGHTS TO TECHNICAL DATA

It is not anticipated that any patents will be generated during this Project. The rights to data generated will be held NewCarbon Feedstocks, LLC and its affiliates.

STATE PROGRAMS AND INCENTIVES

NewCarbon Feedstocks, LLC has not participated in any programs or incentives from the State in the last 5 years.

APPENDIX A

LETTERS OF SUPPORT

American Crystal Sugar Company

101 North 3rd Street
Moorhead, MN 56560

North Dakota Industrial Commission
State Capitol 14th Floor
600 E. Boulevard Ave. Dept. 405

Bismarck, ND 58505-0840
Phone: (701) 328-3722
Attn: Reice Haase

July 31, 2024

Dear Mr. Haase

To Whom It May Concern,

I am writing this letter to express American Crystal Sugar Company's support of NewCarbon's proposed renewable natural gas (RNG) project at our beet sugar processing facility in Hillsboro, North Dakota.

NewCarbon's innovative food waste to energy project will serve the State of North Dakota and its residents by producing pipeline-grade renewable natural gas from feedstocks abundant in the Red River Valley. The project will allow American Crystal Sugar to convert byproducts of our sugar beet refining process – unprocessed pulp and tailings -- into a value-added advanced biofuel product.

We believe the project meets several stated objectives of the North Dakota Industrial Commission's Renewable Energy Program.

- Promoting efficient economic and environmentally sound development and use of the state's natural resources
- Creating construction and operations jobs in the agricultural/biofuels sector
- Growing the economy, enhancing economic stability and opportunity
- Technology development, innovation and ideation
- Supporting economic growth for agricultural producers

American Crystal Sugar Company generates significant quantities of sugar beet pulp and tailings per year. NewCarbon proposes to develop, construct, and operate an anaerobic digester to produce biogas on site, which will be upgraded to produce pipeline quality renewable natural gas. We support NewCarbon's application to secure grant funding from the North Dakota Industrial Commission Renewable Energy Development Program and other funding sources which will enable them to complete through Phase 1 planning and feasibility tasks of this clean energy project.

NewCarbon is a clean energy infrastructure company who develops, owns and operates infrastructure that delivers lifecycle carbon intensity reduction for North America's top industrial, agricultural and energy companies. Their turnkey infrastructure process makes it easier for partners like American Crystal Sugar Company to reduce lifecycle carbon intensity so we can

American Crystal Sugar Company

101 North 3rd Street
Moorhead, MN 56560

remain focused on what we do best. While delivering on a lower-carbon future, we can attest that NewCarbon takes a collaborative approach to maximizing economic benefits to the local communities in which they operate.

We at American Crystal Sugar are pleased to be collaborating with NewCarbon on this innovative project that creates value through environmentally sound and efficient use of an abundant North Dakota natural resource.

Please do not hesitate to reach out to me if you require any further information. I look forward to witnessing the progress and positive economic impact that NewCarbon will deliver

Thank you for considering my support.

Sincerely,

Josh Kamrud
Business Development and Economic Analysis Manager

APPENDIX B

RESUMES OF KEY PERSONNEL

OMAR KHALID KHAYUM
1057 Chadwick Ct., Aurora, IL 60502 | (312) 718-9519 | omar.khayum@gmail.com | linkedin.com/in/omarkhayum

EDUCATION

The University of Chicago Booth School of Business — **Chicago, IL**
MBA (Honors); Concentrations in Economics, Finance & Entrepreneurship — *September 2007 – June 2009*
- Beta Gamma Sigma

Purdue University — **West Lafayette, IN**
Bachelor of Science, Computer Science (Honors); Minors in Mathematics & Management — *August 2000 – May 2004*
- Phi Beta Kappa, Kappa Sigma, Alpha Kappa Psi

EXPERIENCE

NewCarbon, LLC — **Chicago, IL**
Founder and Chief Executive Officer — *November 2023 – Present*
- Founded a clean energy infrastructure company that delivers lifecycle carbon intensity reduction through fit-for-purpose infrastructure solutions that integrate seamlessly across customers' value chains

Cognitive Concierge, LLC — **Chicago, IL**
Founder and Board Member — *September 2019 – Present*
- Founded a health and wellness company that provides virtual services to families navigating cognitive conditions

MemoryCare Corporation — **Chicago, IL**
Founder and Board Member — *March 2010 – Present*
- Founded a healthcare company that provides Speech, Occupational and Physical Therapy to individuals with cognitive conditions

TC Energy — **Houston, TX**
Vice President – North American Low Carbon Origination and Development — *March 2021 – October 2023*
- Led customer origination for North American power, environmental, natural gas and hydrogen development and trading platform
- Led asset development for North American low carbon platform, including wind, solar, pumped hydro, renewable natural gas, green hydrogen production, blue hydrogen production and carbon capture
- Led asset financing for North American low carbon platform, including strategic equity, project debt and tax equity

Annova LNG — **Houston, TX**
Chief Executive Officer, Annova LNG — *October 2018 – March 2021*
- Led a 6.5 MTPA greenfield liquefied natural gas (LNG) export startup company in Texas
- Led development capital fundraising, project finance debt and equity fundraising and origination of long-term offtake contracts
- Led development activities resulting in FERC and DOE approvals to construct and operate the LNG export facility

Chief Operating Officer, Annova LNG — *September 2017 – September 2018*

Constellation Energy — **Baltimore, MD**
Managing Director – Origination, Constellation Energy — *September 2017 – March 2019*
- Led origination for Constellation's natural gas and LNG trading business

Managing Director – Strategic Projects, Constellation Energy — *January 2017 – August 2017*
- Led establishment of joint venture providing development services to new nuclear power stations in the UK and Japan

Exelon Corporation — **Chicago, IL**
Managing Director – Generation Development, Exelon Generation — *June 2015 – December 2016*
- Led greenfield development for utility scale power generation projects, resulting in financing and construction of over $3 billion of new assets, including over 2.5 GW of natural gas, wind, solar and battery storage capacity across the continental United States

Manager – Generation Development, Exelon Generation — *August 2014 – May 2015*
Manager – Wind Business Development, Exelon Generation — *June 2013 – July 2014*
Manager – Corporate Strategy, Exelon Business Services Company — *November 2012 – May 2013*
Principal Analyst – Corporate Strategy, Exelon Business Services Company — *February 2011 – October 2012*
Senior Analyst – Corporate Financial Planning & Analysis, Exelon Business Services Company — *August 2009 – January 2011*

Diamond Management & Technology Consultants — **Chicago, IL**
Associate and Analyst – Strategy & Marketing Competency — *June 2004 – June 2007*

Matthew William Moshier, MBA, P.E., P.M.P.

Email: mwm5221@gmail.com Phone: 724-825-8406

WORK EXPERIENCE

New Carbon **Chicago, IL**

Head of Engineering March 2024- Present

- Accountable for financial analysis, project management, and engineering for a variety of low carbon products to lower customers carbon intensity in the Midwest
- Submitted five DOE concept papers with customer engagement to EERE to obtain development funding for hard to abate emitters
- Developed financial models to support financing of RNG portfolio on a project and portfolio basis
- Engagement with customers across the carbon lifecycle- from feedstock development to product sale and financing
- Development of term sheets for potential offtake, feedstock supply, and investment

Strata Clean Energy **Chicago, IL**

Senior Director of Engineering October 2023- March 2024

- Led execution of pre-FEED study to determine viability of ammonia production with solid oxide electrolysis
- Served as the technical advisor for stage gated process to drive efficient capital deployment and accountability
- Conducted due diligence across portfolio of electrolysis and ammonia production vendors to determine vendor selection
- Developed siting and deployment strategy to identify potential deep-water ammonia shipping and staged capital deployment
- Led customer engagement in order to commercialize a portfolio of ammonia production facilities
- Created a technoeconomic analysis tool for the leadership team to determine the potential customer cost impact for variety of transportation methods

TCEnergy **Chicago, IL**

Senior Project Manager-Project Development April 2022- October 2023

- Directly managed three employees to meet overall corporate net zero ambitions and drive project development and execution
- Recruited, interviewed, onboarded, and managed multiple employees into the engineering and development group
- Project director for a confidential fully integrated, large scale biofuels facility, with full feedstock supply and offtake
- Managed over 1000 tonne per day (tpd) across 15 FEL studies in various levels of development to develop scope, schedule, and cost to meet customer needs for hydrogen and Carbon Capture Utilization and Storage (CCUS) projects
- Created hydrogen sales and purchase agreement (HSPA) and associated financial and pricing model
- Developed TCEnergy Chemours Joint venture to develop 20 tpd of electrolysis and DOE cost share agreement (Press Release)
- Managed development team to submit four DOE hub applications to receive over $2 Bn in DOE funding
- Executed option to purchase two, 30 tpd liquefaction trains from Plug to support safe harbor investment strategy (Press Release)
- Developed financial and pricing model for green and blue hydrogen as well as capital and operational costs to support
- Executed Life Cycle Analysis across the hubs in order to quantify Carbon Intensity and environmental impact
- Recipient of a DOE loan for $1.3 Bn from the Loans Program Office for Phoenix Hydrogen Hub (Press Release)
- Lead developer for Phoenix Hydrogen Hub (Nikola JV) and key member of due diligence and execution
- Managed multiple Joint Venture (JV) partners and customer engagement with varying levels of ownership
- Developed multiple hydrogen and CO2 pipeline routings and strategies to support hub development and potential offtake
- Negotiated CO2 CCUS sequestration agreement with third party to ensure project bankability
- Lead developer for offtake negotiations for potential biofuels, logistics, and other potential off takers
- Developed hydrogen offtake agreement and pricing structure for customer negotiations in conjunction with JV partners
- Directly involved with the commercial negotiations and financial model development for all projects to ensure engineering perspective is incorporated with main accountabilities for capital and operational expenditures
- Created updated governance structure to ensure viability of project financing and execution for hydrogen and CCUS projects
- Completed due diligence across the hydrogen technology portfolio, including operating and manufacturing site visits
- Developed scope, schedule, and cost for ammonia export terminals to advance hydrogen producing opportunities
- Designed of the metrics spreadsheet to more effectively allow engineering team to provide high level development design criteria to understand feasibility of potential projects for rapid RFP response
- Utilized existing and new data sources to provide recommendations for potential Long Term Supply Agreements for SMR, ATR, Electrolysis, Liquefaction, and biofuels production vendors
- Developed templates to help expedite EPC inputs into financial model, reducing time to pricing for market
- Interviewed and developed recommendation for potential Owners Engineer vendors

BP **Chicago, IL**

Project Manager December 2019 – April 2022

- Directly managed 40+ resources and $11 MM in contractor spend to conduct a 446-mile pipeline inspection- longest in BP history
- Managed a portfolio of $13MM and 60+ resources across the U.S. to complete a high-profile HDD, 65 ILI repairs, reactivation of an idled asset, three active line valve replacements, and multiple ILI inspections
- Conducted multiple FEL studies to shape BPs Net Zero initiative which included multiple confidential Carbon Capture, Utilization, and Storage (CCUS) projects as well as a nationwide DOE funded hydrogen transportation system; presented to senior leadership for investment level decision leading to additional due diligence to align with BP net zero ambitions
- Created financial model to analyze carbon capture projects within the business unit to determine carbon break even pricing
- Optimized in line inspection run to reduce the volume of nitrogen emitted and reduced project spend by $2 MM

- Collaborated with global procurement and leadership teams to develop and implement a change order tracking and feedback system to aggregate contractor non-conformance data for current and future negotiations, ~$1 MM/ year in refunds
- Achieved highest level of internal conformance by implementing a self-verification process to audit project execution and ensure alignment with BP's Stage Gate process and identified future opportunities for KPI development and process improvements
- Established a standardized process for managing projects for pipeline repairs key stakeholder communications
- Utilized Power BI to develop a tool which tracked third party encroachments into pipeline ROW to inform front line operations

Williams Companies Inc. **Pittsburgh, PA**

Project Developer Sr. April 2017 – December 2019

- Lead developer selected to analyze and execute over $2 B of capital projects: gas and condensate gathering, compression, FERC regulated pipelines, gas processing, and fractionation facilities in Ohio River Supply Hub (ORSH)
- Completed commercial deals across gathering and processing business resulting in over $2 B in incremental EBITDA
- Subject matter expert on Processing and Fractionation and expansion capital requirements for multiple M&A deals
- Managed FERC open season process, rate case development, and corporate structure for NGL pipelines
- Presented over $500 MM in proposed capital projects for FY 2017-2019 within capital funding (CAPEX) gated process to senior leadership, board members, and commercial teams to ensure projects meet long term growth strategy
- Developed discounted cash flow models for rate setting purposes for projects with CAPEX less than $150 MM
- Automated and streamlined forecasting model to include commercial scenarios, mitigating contractual risk, and reducing product over/undersell by 15%

Project Engineer III December 2013 – April 2017

- Completed over $650 MM in large capital projects from front end engineering and design (FEED), detailed design, construction support, operations turnover, and post project support
- Managed over $5 MM in engineering contactors, resulting in engineering costs 10% below budget on average
- Provided engineering assistance for construction, including requests for information, commissioning and start-up support, and project deliverable turnover
- Designed, constructed, and commissioned the startup of multiple facilities, including compression, interconnects, pipelines, turbo expander, de-ethanizers, slug catcher, flare, stabilization, frac train, rail bays, and storage tanks
- Developed and ensured efficient execution of multiple company standards for engineering design reviews, Process Hazard Analysis, Layers of Protection Analysis, Management of Changes, Process Safety Startup Review, Alarm Rationalization, Factory Acceptance Tests, and Process Safety Management
- Member of steering committee that developed and implemented companywide standard for API 12F tanks

Pinnacle Asset Integrity Services (PinnacleAIS) **Pasadena, TX**

Project Lead May 2012 – November 2013

- Directly supervised and trained a team of seven consultants on NCRA site-specific procedures in multiple locations
- Oversaw the completion and project reporting of a Mechanical Integrity and Risk Based Inspection program at the National Cooperative Refinery Association (NCRA) Refinery in McPherson, KS
- Managed a total of four project budgets with a gross revenue of $2 MM and gathered data for future proposal bids
- Implemented a companywide best practice for integration of PinnacleAIS Inspection Services with PinnacleAIS Services department for turnaround planning purposes

EDUCATION

Indiana University Bloomington, IN
The Kelley School of Business, MBA, Finance Major August 2023

The Pennsylvania State University University Park, PA
The College of Engineering, Bachelor of Science in Chemical Engineering May 2012

JUSTIN GUTKNECHT
Head of Solutions
NewCarbon LLC
1648 W Division Street, Unit 709, Chicago, IL 60622
312.576.8004 (phone), Justin.Gutknecht@newcarbon.energy

Education and Training

M.B.A., Accounting, Finance, and Strategy, Booth School of Business University of Chicago, 2017.
B.S. Finance, University of Illinois at Urbana-Champaign, 2004.
Chartered Financial Analyst (CFA), 2013–present.

Research and Professional Experience

- Lead structuring of clean energy infrastructure utilizing low carbon feedstocks, fuels and carbon capture technologies by providing commercial guidance to the project development, origination, engineering, and capital markets teams.
- Develop a near and long-term customer-focused decarbonization strategy by deploying energy infrastructure and technologies to achieve lifecycle carbon intensity reduction in manufacturing and production processes.
- Oversee a strategic execution plan incorporating an entire project lifecycle, from conception to commissioning. Include risk mitigation, managing commercial relationships, safety, scheduling, budgeting, and project finance transactional activities.
- Coordinate financing activities, including tax equity and debt financing, provide guidance on financial models, identify risks within contracts, and manage relationships with third-party financiers.

2021–2023: Director, Energy Origination and Development, TC Energy.

- Managed TCE Energy's origination and development of utility-scale renewable power projects and low-carbon infrastructure projects in the United States.
- Supervised a U.S. Origination and Development team covering structured origination, mid-marketing, development, interconnection, permitting and land management functions.
- Led commercial negotiations, development, and execution efforts to establish a U.S. portfolio of wind, solar, hydrogen, clean fuels and carbon capture, transportation and sequestration projects.
- Led Federal and State Hydrogen and Carbon Capture funding opportunities totaling $1 billion, receiving DOE grant awards for projects within the Heartland and ARCH2 Regional Hydrogen Hubs.

2017–2021: Senior Vice President, Finance and Development, Annova LNG.

- Led due diligence, development and execution efforts in multi-phase equity financings with joint venture partners and construction capital fundraising.
- Managed financial advisor, insurance advisor, and outside counsel engagements to support the bankability of terms and conditions of various project contracts and provided structuring advice.
- Led project development activities, including electrical interconnection, wholesale power procurement, dredging, local and state tax incentive negotiations, accounting and tax matters.

2015–2017: Principal, Generation Development Analytics, Exelon Corporation.

- Led financial evaluation and transaction execution support for acquisition and greenfield development of utility scale wind, solar and battery storage generation projects.
- Led development activities for battery storage, including site control, permitting, interconnection, engineering, technology evaluation, and offtake.

2011–2015: Manager, Financial Planning and Analysis, Evraz North America.

- Supervised on-site mill financial managers in monthly forecasting and annual budget processes and consolidated the financial results of the Tubular Product Division.
- Obtained approvals for capital investment projects and provided technical financial support and recommendations on the evaluation of potential alliances, acquisitions, capital investments, and other issues affecting operations.

2004–2011: Senior Financial Analyst, Corporate Development, Telephone and Data Systems Inc.

- Performed valuations for the acquisitions of wireless spectrum and acquisitions.
- Prepared presentations to bond-rating agencies, reviewed credit metric ratios based on rating agency methodologies, and analyzed strategic and financial initiatives to improve capital structure.

Professional Activities

Member, CFA Society of Chicago, 2013–present.

PHILLIP FRANSHAW

4205 Dickson Street, Houston, TX 77007 | (713)253-0690 | phillip.franshaw@newcarbon.energy

EXPERIENCE

NewCarbon—Houston, TX
Co-Founder & Head of Customer Engagement *November 2023—Present*

- Co-founded a clean energy infrastructure company that delivers lifecycle carbon intensity reduction through fit-for-purpose solutions that integrate across customers' value chains
- Lead deal structuring and contract negotiations while working collaboratively with legal, finance, engineering, and construction leads to optimize project economics and mitigate risk

TC Energy Corporation—Houston, TX
Origination Specialist, Power & Energy Solutions *April 2021—November 2023*

- Led customer origination for United States low carbon platform including wind, solar, renewable natural gas, green hydrogen, and sustainable aviation fuel production
- Led deal structuring, negotiations, and execution of contracts to secure mutually beneficial agreements with equity partners, customers, and other project stakeholders

Exelon Corporation—Houston, TX
Senior Vice President & Co-Founder, Annova LNG, LLC *October 2012—March 2021*

- Co-founded a 6.5 MTPA greenfield liquefied natural gas (LNG) export company
- Led origination, structuring, and negotiation of long-term offtake contracts

713 Capital Partners—Houston, TX
Co-Founder & Principal *September 2007—March 2014*

- Co-founded municipal real estate consulting practice providing advisory and development management services

Cockrell Interests Inc.—Houston, TX
Managing Director *September 2003—September 2007*

- Managed a diversified real estate portfolio for a family office
- Led structuring, negotiation, and execution in a portfolio of direct and indirect investments including wholly owned properties, joint ventures, and commingled funds

Hines Interest Limited Partnership—Houston, TX
Project Manager *June 2000—September 2001*

- Managed a global diversified real estate portfolio totaling $2.1billion

The Coca-Cola Company—Atlanta, GA
Business Development Consultant—Houston, TX *September 2001—September 2003*

- Led acquisition structuring, negotiation, and execution of premium juice drink company

Business Development Manager—Atlanta, GA *August 1995—February 1998*

- Led acquisition structuring, negotiation, and execution of bottling assets totaling $2.4 billion

Principal Financial Analyst—Houston, TX *August 1992-August 1995*

- Led restructuring of $2.0 billion operating division

Merrill Lynch Capital Markets—New York City, NY
Equity Trader *August 1986—August 1988*

EDUCATION

The University of Texas at Austin
Master of Business Administration, Finance & International Business *August 1992*

Georgetown University
Bachelor of Arts, English *May 1986*

Brian Lammers
2437 Girard Avenue South
Minneapolis, MN 55405
(612) 518-3798
brian.lammers@newcarbon.energy

Experience

Brian has more than 20 years of experience developing utility-scale renewable power, energy storage and HVDC transmission infrastructure in the United States and Canada. Brian held leadership positions at Exelon, EDP North America and RES Americas. During his career Brian has led origination, development and financing initiatives resulting in investment of more than $6 Billion in low carbon power and energy solutions.

NewCarbon, Chicago, IL
Head of Feedstocks
January 2024 - Present
Founding partner of NewCarbon, a developer, owner and operator of fit-for-purpose solutions for agricultural and industrial customers to lower the lifecycle carbon intensity of their operations.

Advanced Generation Development, Minneapolis, MN
President and Founder
March 2017 – Present

- Originated, developed, and sold a 700 MW wind generation development portfolio to a leading US independent power producer
- Closed 850 MW of wind and solar power purchase agreements for midstream energy client, organized buy-side solicitation, evaluated proposals, led contract negotiations
- Led integration and development of 400 MW solar generation portfolio for power client
- Advisor for site identification and early-stage development of hydrogen production projects, two of which received $1.85 billion in DOE Grant awards
- Led commercial offtake and development efforts for a private equity-backed 2100 MW merchant HVDC transmission project

Renewable Energy Systems, Minneapolis, MN
Vice President, Development
October 2017 – December 2018

- Closed power purchase agreements for 400 MW of wind and solar generation
- Held P&L responsibility for regional origination and development office
- Managed joint venture with leading US IPP resulting in construction of 1 GW of new wind and solar generation

Exelon Generation, Chicago, IL
Managing Director, Renewables and Technology Development
November 2011 - March 2017

- Led development and acquisition of 2 GW of wind and solar generation and battery storage, deploying ~$3 billion in CapEx, and doubling the size of Exelon's renewable generation fleet

EDP Renewables N.A., Minneapolis, MN
Director of Development, Upper Midwest and Northeast U.S.
March 2008 – November 2011

- Completed development of more than 750 MW (~ $1.5 billion) of wind generation
- Responsible for two regional development teams, fifteen staff, a 3 GW project pipeline and $10 million annual budget in the Midwest and Northeastern U.S.

John Deere Finance, Johnston, IA
October 2006 – March 2008

- Led development of 500 MW (~ $1 billion) of U.S. wind power generation projects
- Spearheaded transition from distributed-scale to utility-scale wind generation
- Developed and closed financing for the first multi-megawatt wind farm in Michigan

Gamesa Energy, Philadelphia, PA
September 2004 – October 2006

- Led development of more than 500 MW (~ $1 billion) of US wind generation projects including the largest wind generation project constructed in Pennsylvania
- Opened and managed regional development office

Navitas Energy, Minneapolis, MN
November 1998 – September 2004

- Led origination, development, and completion of 250 MW (~ $500 million) of wind generation
- Supported successful M&A efforts with U.S. and European IPPs

Education

University of Minnesota - Minneapolis, MN
MBA

University of Wisconsin – Madison, WI
Bachelor of Science

Community Involvement

American Red Cross, Twin Cities Chapter – Minneapolis, MN
Board of Directors
June 2023 - Present

City of Lakes Waldorf School, Minneapolis, MN
Secretary, Board of Trustees
Chair, Development Committee
2019 – Present

Clean Grid Alliance (fka Wind on the Wires), Saint Paul, MN
Treasurer and Board Member
2010 – 2021

APPENDIX C

TAX LIABILITY STATEMENT

Industrial Commission

Tax Liability Statement

Applicant:

NewCarbon Feedstocks, LLC

Application Title:

ACS NewCarbon RNG Project

Program:

- ☐ Lignite Research, Development and Marketing Program
- ☑ Renewable Energy Program
- ☐ Oil & Gas Research Program
- ☐ Clean Sustainable Energy Authority

Certification:

I hereby certify that the applicant listed above does not have any outstanding tax liability owed to the State of North Dakota or any of its political subdivisions.

Digitally signed by Omar Khayum
Date: 2024.07.31 12:26:40 -05'00'

Signature

President

Title

July 31, 2024

Date

APPENDIX D

CITATIONS AND BUDGET NOTES

CITATIONS

ND Department of Agriculture, D. G. (n.d.). Retrieved from https://www.ndda.nd.gov/sites/www/files/documents/files/2023%20ND%20Ag%20brochure.pdf

Natalia Mioduszewska, M. A. (2018). The usefulness of sugar beets for biogas production in relations of the storage time and sugar content. *E3S Web of Conferences*.

Francisco López, A., Lago Rodríguez, T., Faraji Abdolmaleki, S., Galera Martínez, M., & Bello Bugallo, P. (2024). *From Biogas to Biomethane: An In-Depth Review of Upgrading Technologies That Enhance Sustainability and Reduce Greenhouse Gas Emissions*. Retrieved from https://www.mdpi.com/2076-3417/14/6/2342.

BUDGET NOTES

Salaries: Salary estimates are based on the scope of work and prior experience on projects of similar scope. The labor rate used for specifically identified personnel is the current hourly rate for that individual.

Fringe Benefits: Fringe benefits is calculated as 11.6% of gross salary which is calculated as the total of: 6.2% for Employer Social Security Withholding, 1.45% for Employer Medicare Withholding, 0.6% for Employer Federal Unemployment Tax Withholding (FUTA), 0.85% for Employer State Unemployment Tax Withholding (SUI), 2.5% for Paid Leave for All Workers.

Travel: Travel may include site visits, fieldwork, meetings, and conferences. Travel costs are estimated and paid in accordance with OMB Uniform Guidance 2 CFR 200, Section 474. Daily meal rates are based on U.S. General Services Administration (GSA) rates. Other estimates such as airfare, lodging, ground transportation, and miscellaneous costs are based on a combination of historical costs and current market prices. Miscellaneous travel costs may include parking fees, Internet charges, long-distance phone, copies, faxes, shipping, and postage.

Supplies: Supplies include items and materials that are necessary for the research project and can be

directly identified to the project. Supply and material estimates are based on prior experience with similar projects. Examples of supply items are chemicals, gases, glassware, nuts, bolts, piping, data storage, paper, memory, software, toner cartridges, maps, sample containers, minor equipment (value less than $5000), signage, safety items, subscriptions, books, reference materials. General purpose office supplies (pencils, pens, paper clips, staples, Post-it notes, etc.) are included in the Supplies cost.

Communications: Telephone, cell phone, and fax line charges are included in the Supplies cost; however, direct project costs may include line charges at remote locations, long-distance telephone charges, postage, and other data or document transportation costs that can be directly identified to a project. Estimated costs are based on prior experience with similar projects.