Control Number 2678-1792

OMB Number: 4040-0004
Expiration Date: 12/31/2022

Application for Federal Assistance SF-424

* 1. Type of Submission:
- [ ] Preapplication
- [x] Application
- [ ] Changed/Corrected Application

* 2. Type of Application:
- [x] New
- [ ] Continuation
- [ ] Revision

* If Revision, select appropriate letter(s):

* Other (Specify):

* 3. Date Received: 06/30/2022

4. Applicant Identifier:

5a. Federal Entity Identifier:

5b. Federal Award Identifier:

State Use Only:

6. Date Received by State:

7. State Application Identifier:

8. APPLICANT INFORMATION:

* a. Legal Name: NOVONIX Anode Materials LLC

* b. Employer/Taxpayer Identification Number (EIN/TIN): [redacted] (b) (6)

* c. UEI: N/A

d. Address:

* Street1: 353 Corporate Place
Street2:
* City: Chattanooga
County/Parish:
* State: TN: Tennessee
Province:
* Country: USA: UNITED STATES
* Zip / Postal Code: 37419-2338

e. Organizational Unit:

Department Name:

Division Name:

f. Name and contact information of person to be contacted on matters involving this application:

Prefix:

* First Name: Chris

Middle Name:

* Last Name: Burns

Suffix:

Title: CEO

Organizational Affiliation:

* Telephone Number: [redacted] (b) (6)

Fax Number:

* Email: [redacted]

Application for Federal Assistance SF-424

*** 9. Type of Applicant 1: Select Applicant Type:**

R: Small Business

Type of Applicant 2: Select Applicant Type:

Type of Applicant 3: Select Applicant Type:

* Other (specify):

*** 10. Name of Federal Agency:**

Department of Energy

11. Catalog of Federal Domestic Assistance Number:

CFDA Title:

*** 12. Funding Opportunity Number:**

DE-FOA-0002678

* Title:

Bipartisan Infrastructure Law Battery Materials Processing and Battery Manufacturing

13. Competition Identification Number:

Title:

14. Areas Affected by Project (Cities, Counties, States, etc.):

Add Attachment | Delete Attachment | View Attachment

*** 15. Descriptive Title of Applicant's Project:**

Large scale, energy efficient, domestic production of high-performance synthetic graphite anode material for use in electric vehicles and energy storage systems

Attach supporting documents as specified in agency instructions.

Add Attachments | Delete Attachments | View Attachments

Control Number 2678-1792

Application for Federal Assistance SF-424

16. Congressional Districts Of:

* a. Applicant: TN-03
* b. Program/Project: TN-03

Attach an additional list of Program/Project Congressional Districts if needed.

Add Attachment | Delete Attachment | View Attachment

17. Proposed Project:

* a. Start Date: [redacted]
* b. End Date: [redacted]

18. Estimated Funding ($):

* a. Federal	150,000,000.00
* b. Applicant	877,260,704.00
* c. State	[redacted] (b) (4)
* d. Local	[redacted]
* e. Other	[redacted]
* f. Program Income	[redacted]
* g. TOTAL	1,071,670,704.00

*** 19. Is Application Subject to Review By State Under Executive Order 12372 Process?**

- [ ] a. This application was made available to the State under the Executive Order 12372 Process for review on _____.
- [ ] b. Program is subject to E.O. 12372 but has not been selected by the State for review.
- [x] c. Program is not covered by E.O. 12372.

*** 20. Is the Applicant Delinquent On Any Federal Debt? (If "Yes," provide explanation in attachment.)**

- [ ] Yes
- [x] No

If "Yes", provide explanation and attach

Add Attachment | Delete Attachment | View Attachment

21. *By signing this application, I certify (1) to the statements contained in the list of certifications and (2) that the statements herein are true, complete and accurate to the best of my knowledge. I also provide the required assurances** and agree to comply with any resulting terms if I accept an award. I am aware that any false, fictitious, or fraudulent statements or claims may subject me to criminal, civil, or administrative penalties. (U.S. Code, Title 218, Section 1001)**

- [x] ** I AGREE

** The list of certifications and assurances, or an internet site where you may obtain this list, is contained in the announcement or agency specific instructions.

Authorized Representative:

Prefix:	
* First Name:	Chris
Middle Name:	
* Last Name:	Burns
Suffix:	
* Title:	CEO
* Telephone Number:	[redacted] (b) (6)
Fax Number:	
* Email:	[redacted]
* Signature of Authorized Representative:	[redacted] (b) (6)
* Date Signed:	06/29/2022

August 2005

U.S. DEPARTMENT OF ENERGY

FINANCIAL ASSISTANCE CERTIFICATIONS AND ASSURANCES FOR USE WITH SF 424

Applicant: NOVONIX Anode Materials LLC

Solicitation No.: EERE_BIL_DE-FOA-0002678

The following certifications and assurances must be completed and submitted with each application for financial assistance. The name of the person responsible for making the certifications and assurances must be typed in the signature block on the forms.

Certifications Regarding Lobbying; Debarment, Suspension and Other Responsibility Matters; and Drug Free Workplace Requirements

DOE F 1600.5, Assurance of Compliance Nondiscrimination in Federally Assisted Programs

CERTIFICATIONS REGARDING LOBBYING; DEBARMENT, SUSPENSION AND OTHER RESPONSIBILITY MATTERS; AND DRUG FREE WORKPLACE REQUIREMENTS

Applicants should refer to the regulations cited below to determine the certification to which they are required to attest. Applicants should also review the instructions for certification included in the regulations before completing this form. Signature of this form provides for compliance with certification requirements under 10 CFR Part 601 "New Restrictions on Lobbying," 10 CFR Part 606 "Governmentwide Debarment and Suspension (Nonprocurement) and 10 CFR Part 607 "Governmentwide Requirements for Drug-Free Workplace (Grants)." The certifications shall be treated as a material representation of fact upon which reliance will be placed when the Department of Energy determines to award the covered transaction, grant, or cooperative agreement.

1. LOBBYING

The undersigned certifies, to the best of his or her knowledge and belief, that:

(1) No Federal appropriated funds have been paid or will be paid, by or on behalf of the undersigned, to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with the awarding of any Federal contract, the making of any Federal grant, the making of any Federal loan, the entering into of any cooperative agreement, and the extension, continuation, renewal, amendment, or modification of any Federal contract, grant, loan, or cooperative agreement.

(2) If any funds other than Federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with this Federal contract, grant, loan, or cooperative agreement, the undersigned shall complete and submit Standard Form-LLL, "Disclosure Form to Report Lobbying," in accordance with its instructions.

(3) The undersigned shall require that the language of this certification be included in the award documents for all subawards at all tiers (including subcontracts, subgrants, and contracts under grants, loans, and cooperative agreements) and that all subrecipients shall certify and disclose accordingly.

This certification is a material representation of fact upon which reliance was placed when this transaction was made or entered into. Submission of this certification is a prerequisite for making or entering into this transaction imposed by section 1352, title 31, U.S. Code. Any person who fails to file the required certification shall be subject to a civil penalty of not less than $10,000 and not more than $100,000 for each such failure.

2. ADDITIONAL LOBBYING REPRESENTATION

Applicant organizations which are described in section 501(c)(4) of the Internal Revenue Code of 1986 and engage in lobbying activities after December 31, 1995, are not eligible for the receipt of Federal funds constituting an award, grant, or loan.

As set forth in section 3 of the Lobbying Disclosure Act of 1995 as amended, (2 U.S.C. 1602), lobbying activities are defined broadly to include, among other thins, contacts on behalf of an organization with specified employees of the Executive Branch and Congress with regard to Federal legislative, regulatory, and program administrative matters.

Check the appropriate block:

The applicant is an organization described in section 501(c)(4) of the Internal Revenue Code of 1986? ☐ Yes ☑ No

If you checked "Yes" above, check the appropriate block:

The applicant represents that after December 31, 1995 it ☐ has ☐ has not engaged in any lobbying activities as defined in the Lobbying Disclosure Act of 1995, as amended.

3. DEBARMENT, SUSPENSION, AND OTHER RESPONSIBILITY MATTERS

(1) The prospective primary participant certifies to the best of its knowledge and belief, that it and its principals:

(a) Are not presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from covered transactions by any Federal department or agency;

(b) Have not within a three-year period preceding this proposal been convicted of or had a civil judgment rendered against them for commission of fraud or a criminal offense in connection with obtaining, attempting to obtain, or performing a public (Federal, State or local) transaction or contract under a public transaction; violation of Federal or State antitrust

statutes or commission of embezzlement, theft, forgery, bribery; falsification or destruction of records, making false statements, or receiving stolen property;

(c) Are not presently indicted for or otherwise criminally or civilly charged by a governmental entity (Federal, State or local) with commission of any of the offenses enumerated in paragraph (1)(b) of this certification; and

(d) Have not within a three-year period preceding this application/proposal had one or more public transactions (Federal, State or local) terminated for cause or default.

(2) Where the prospective primary participant is unable to certify to any of the statements in this certification, such prospective participant shall attach an explanation to this proposal.

4. DRUG-FREE WORKPLACE

This certification is required by the Drug-Free Workplace Act of 1988 (Pub.L. 100-690, Title V, Subtitle D) and is implemented through additions to the Debarment and Suspension regulations, published in the Federal Register on January 31, 1989, and May 25, 1990.

ALTERNATE I (GRANTEES OTHER THAN INDIVIDUALS)

(1) The grantee certifies that it will or will continue to provide a drug-free workplace by:

(a) Publishing a statement notifying employees that the unlawful manufacture, distribution, dispensing, possession, or use of a controlled substance is prohibited in the grantee's workplace and specifying the actions that will be taken against employees for violation of such prohibition;

(b) Establishing an ongoing drug-free awareness program to inform employees about:

(1) The dangers of drug abuse in the workplace;
(2) The grantee's policy of maintaining a drug-free workplace;
(3) Any available drug counseling, rehabilitation, and employee assistance programs; and
(4) The penalties that may be imposed upon employees for drug abuse violations occurring in the workplace;

(c) Making it a requirement that each employee to be engaged in the performance of the grant be given a copy of the statement required by paragraph (a);

(d) Notifying the employee in the statement required by paragraph (a) that, as a condition of employment under the grant, the employee will:

(1) Abide by the terms of the statement; and
(2) Notify the employer in writing of his or her conviction for a violation of a criminal drug statute occurring in the workplace not later than five calendar days after such conviction;

(e) Notifying the agency, in writing, within ten calendar days after receiving notice under subparagraph (d)(2) from an employee or otherwise receiving actual notice of such conviction. Employers of convicted employees must provide notice, including position title, to every grant officer or other designee on whose grant activity the convicted employee was working, unless the Federal agency has designated a central point for the receipt of such notices. Notice shall include the identification number(s) of each affected grant;

(f) Taking one of the following actions, within 30 calendar days of receiving notice under subparagraph (d)(2), with respect to any employee who is so convicted:

(1) Taking appropriate personnel action against such an employee, up to and including termination, consistent with the requirements of the Rehabilitation Act of 1973, as amended; or
(2) Requiring such employee to participate satisfactorily in a drug abuse assistance or rehabilitation program approved for such purposes by a Federal, State or local health, law enforcement, or other appropriate agency;

(g) Making a good faith effort to continue to maintain a drug- free workplace through implementation of paragraphs (a),(b),(c),(d),(e), and (f).

(2) The grantee may insert in the space provided below the site(s) for the performance of work done in connection with the specific grant:

Place of Performance: (Street address, city, county, state, zip code)

Hickory Valley Road 35°06'13.6"N 85°08'48.6"W
Chattanooga, TN 37416-1347

☐ Check if there are workplaces on file that are not identified here.

ALTERNATE II (GRANTEES WHO ARE INDIVIDUALS)

(1) The grantee certifies that, as a condition of the grant, he or she will not engage in the unlawful manufacture, distribution, dispensing, possession, or use of a controlled substance in conducting any activity with the grant.

(2) If convicted of a criminal drug offense resulting from a violation occurring during the conduct of any grant activity, he or she will report the conviction, in writing, within 10 calendar days of the conviction, to every grant officer or other designee, unless the Federal agency designates a central point for the receipt of such notices. When notice is made to such a central point, it shall include the identification number(s) of each affected grant.

5. SIGNATURE

As the duly authorized representative of the applicant, I hereby certify that the applicant will comply with the above certifications.

Name of Applicant: NOVONIX Anode Materials LLC

Printed Name and Title of Authorized Representative: Chris Burns, CEO

(b) (6) [redacted]

June 29, 2022
DATE

DOE F 1600.5
(06-94)
All Other Editions are Obsolete

U.S. Department of Energy

Assurance of Compliance

Nondiscrimination in Federally Assisted Programs

OMB Control No.
1910-0400

OMB Burden Disclosure Statement

Public reporting burden for this collection of information is estimated to average 15 minutes per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to Office of Information Resources Management Policy, Plans, and Oversight, Records Management Division, HR-422 - GTN, Paperwork Reduction Project (1900-0400), U.S. Department of Energy, 1000 Independence Avenue, S.W., Washington, DC 20585; and to the Office of Management and Budget (OMB), Paperwork Reduction Project (1900-0400), Washington, DC 20503.

NOVONIX Anode Materials LLC (Hereinafter called the "Applicant")

HEREBY AGREES to comply with Title VI of the Civil Rights Act of 1964 (Pub. L.88-352), Section 16 of the Federal Energy Administration Act of 1974 (Pub.L.93-275), Section 401 of the Energy Reorganization Act of 1974 (Pub.L.93-438), Title IX of the Education Amendments of 1972, as amended (Pub.L.92-318, Pub.L.93-568, and Pub.L.94-482), Section 504 of the Rehabilitation Act of 1973 (Pub.L.93-112), the Age Discrimination Act of 1975 (Pub.L.94-135), Title VIII of the Civil Rights Act of 1968 (Pub.L.90-284), the Department of Energy Organization Act of 1977 (Pub.L.95-91), and the Energy Conservation and Production Act of 1976, as amended (Pub.L.94-385) and Title 10, Code of Federal Regulations, Part 1040. In accordance with the above laws and regulations issued pursuant thereto, the Applicant agrees to assure that no person in the United States shall, on the ground of race, color, national origin, sex, age, or disability, be excluded from participation in, be denied the benefits of, or be otherwise subjected to discrimination under any program or activity in which the Applicant receives Federal assistance from the Department of Energy.

Applicability and Period of Obligation

In the case of any service, financial aid, covered employment, equipment, property, or structure provided, leased, or improved with Federal assistance extended to the Applicant by the Department of Energy, this assurance obligates the Applicant for the period during which Federal assistance is extended. In the case of any transfer of such service, financial aid, equipment, property, or structure, this assurance obligates the transferee for the period during which Federal assistance is extended. If any personal property is so provided, this assurance obligates the Applicant for the period during which it retains ownership or possession of the property. In all other cases, this assurance obligates the Applicant for the period during which the Federal assistance is extended to the Applicant by the Department of Energy.

Employment Practices

Where a primary objective of the Federal assistance is to provide employment or where the Applicant's employment practices affect the delivery of services in programs or activities resulting from Federal assistance extended by the Department, the Applicant agrees not to discriminate on the ground of race, color, national origin, sex, age, or disability, in its employment practices. Such employment practices may include, but are not limited to, recruitment advertising, hiring, layoff or termination, promotion, demotion, transfer, rates of pay, training and participation in upward mobility programs; or other forms of compensation and use of facilities.

Subrecipient Assurance

The Applicant shall require any individual, organization, or other entity with whom it subcontracts, subgrants, or subleases for the purpose of providing any service, financial aid, equipment, property, or structure to comply with laws cited above. To this end, the subrecipient shall be required to sign a written assurance form, however, the obligation or both recipient and subrecipient to ensure compliance is not relieved by the collection or submission of written assurance forms.

Data Collection and Access to Records

The Applicant agrees to compile and maintain information pertaining to programs or activities developed as a result of the Applicant's receipt of Federal assistance from the Department of Energy. Such information shall include, but is not limited to, the following: (1) the manner in which services are or will be provided and related data necessary for determining whether any persons are or will be denied such services on the basis of prohibited discrimination; (2) the population eligible to be served by race, color, national origin, sex, age, and disability; (3) data regarding covered employment including use or planned use of bilingual public contact employees serving beneficiaries of the program where necessary to permit effective participation by beneficiaries unable to speak or understand English; (4) the location of existing or proposed facilities connected with the program and related information adequate for determining whether the location has or will have the effect of unnecessarily denying access to any person on the basis of prohibited discrimination; (5) the present or proposed membership by race, color, national origin, sex, age, and disability, in any planning or advisory body which is an integral part of the program; and (6) any additional written data determined by the Department of Energy to be relevant to its obligation to assure compliance by recipients with laws cited in the first paragraph of this assurance.

DOE F 1600.5
(06-94)
All Other Editions are Obsolete

OMB Control No.
1910-0400

The Applicant agrees to submit requested data to the Department of Energy regarding programs and activities developed by the Applicant from the use of Federal assistance funds extended by the Department of Energy, Facilities of the Applicant (including the physical plants, building, or other structures) and all records, books, accounts, and other sources of information pertinent to the Applicant's compliance with the civil rights laws shall be made available for inspection during normal business hours on request of an officer or employee of the Department of Energy specifically authorized to make such inspections. Instructions in this regard will be provided by the Director, Office of Civil Rights, U.S. Department of Energy.

This assurance is given in consideration of and for the purpose of obtaining any and all Federal grants, loans, contracts (excluding procurement contracts), property, discounts or other Federal assistance extended after the date hereto, to the Applicants by the Department of Energy, including installment payments on account after such data of application for Federal assistance which are approved before such date. The Applicant recognizes and agrees that such Federal assistance will be extended in reliance upon the representation and agreements made in this assurance and that the United States shall have the right to seek judicial enforcement of this assurance. This assurance is binding on the Applicant, the successors, transferees, and assignees, as well as the person(s) whose signature appears below and who are authorized to sign this assurance on behalf of the Applicant.

Applicant Certification

The Applicant certifies that it has complied, or that, within 90 days of the date of the grant, it will comply with all applicable requirements of 10 C.F.R. § 1040.5 (a copy will be furnished to the Applicant upon written request to DOE).

Designated Responsible Employee

Daniel Deas, President, Anode Materials

(b) (6)

(b) (6)

6-29-22
Date

NOVONIX Anode Materials LLC
Applicant's Name

(b) (6)

353 Corporate Place, Chattanooga, TN 37419
Address:

06/29/2022
Date

Authorized Official:
President, Chief Executive Officer
or Authorized Designee

Chris Burns, CEO
Name and Title (Printed to Typed)

(b) (6)

(b) (6)

June 29, 2022
Date

DATA MANAGEMENT PLAN

Data Types and Sources

Through this Project, data will be generated for purposes of project engineering, permitting, process engineering, equipment installation, equipment commissioning, and material output qualification. All data is considered proprietary except for grant reporting requirements.

- ***Site, Facility, and Utility Equipment Engineering Docs***: Collected in "PlanGrid" or other determined secure data server shared with Project team.
- ***Process Equipment Engineering Docs and Manuals:*** Stored in NOVONIX Anode Materials LLC (NAM) access-controlled Cloud server.
- **Processing and Maintenance Data:**
  - Stored as access-controlled physical log sheets.
  - Saved in process data logbooks within NAM's servers.
- ***Material Analytical Data:***
  - Stored in Laboratory Inventory Management System (LIMS).
  - Digital copies provided from third party reviewers - saved in NAM's servers.
  - Analytical data backed up to server systems.
- ***Updates to DOE:*** Reports on milestones and updates submitted to the DOE will take the form of PowerPoint presentations. These presentations will include text information, as well as .jpg images containing equipment, material, or sections of instrument generated PDF reports. Graphs and charts will be generated from raw data according to standard, easy to read formats typical of NAM. Charts and graphs are typically generated in Microsoft Excel and imported as images into the presentations.
- **Data in Publications:** There is no current plan to publish the data generated through this Project in scientific journals.

All NAM generated data and metadata are collected and controlled within NAM servers. Much of this data will exist as Microsoft Office files (primarily Word, Excel, and PowerPoint), and as digitally created PDFs or those generated through scanning physical documents.

Content and Format

The nature of the information created during the duration of the Project is diverse and depends on the Project milestone. It ranges from site design, process modeling, updates on equipment installation, processing parameters and results, and ultimately material physical and electrochemical properties measured internally and externally through partners.

Equipment Development and Install: Data revolving around equipment development and install will be provided by the equipment manufacturers. Final technical drawings and manuals will be ready before factory acceptance testing for process equipment. Technical drawings will be in the form of PDF (.dwg on request). Manuals will also be provided in the form of PDF in both physical and printed forms. Other associated equipment data will contain general assembly drawings, approved drawings, and installation instructions and equipment manuals. Associated equipment has previously been installed at NAM's production facility and the associated

data will be stored along with the data from previous systems. Updates on installation of equipment will be presented as PowerPoint presentations.

(b) (4) [redacted]

Processing Parameters: Data revolving around processing parameters will be generated by NAM during the commissioning and operation of the installed equipment. This data will typically take the form of parameter log sheets within Excel, utilized to run the equipment. Additionally, PowerPoint presentations may be created to report on processing levers and connected with trends in final material data.

Material Physical and Electrochemical Data: This data will be measured within the partner units, then recorded and stored according to the standard operating procedures utilized for recording all NAM production data. This will typically take the form of Excel Spreadsheets with some data copied into presentations for trending with process data as described above. Physical and electrochemical properties that are obtained from scientific instrumentation are saved as the specific instrument files with a report exported to PDF or .txt as required.

Sharing and preservation

Most data generated from the Project will remain in NAM's servers for the life of the facility and is considered proprietary. NAM does not plan to release data to the public or publish results in journal publications.

Equipment data will be retained for the useful life of such equipment until official decommissioning. Data regarding equipment design, install, and maintenance/operation will be transferred directly from the manufacturer to NAM. (b) (4) [redacted] A physical copy of certain manuals and drawings will be provided with the system for utilization during install and operation.

(b) (4) [redacted]

Data is transferred between testing third parties, including Oak Ridge National Lab, Argonne National Lab, Phillips 66, and NAM for relevant physical and electrochemical data. This will be shared through those partners' typical protected avenues.

Information regarding project milestones will be provided to the DOE via email in a standardized PowerPoint format.

NAM may choose to share portions of the created data with specific entities depending on company needs. Parties of interest may include graphite producers, heat treatment specialists, and raw material providers or customers. Confidential data will always be marked as *Confidential Information* or equivalent before sharing.

Protection

We do not envision any data that will include personal information or any Personally Identifiable Information. Physical copies of drawings, manuals, processing, or analytical data are stored in filing cabinets with restricted access. Physical copies will be digitized to the extent that is reasonable. Electronic copies are stored in restricted access servers. All data is restricted in access on a need-to-know basis. This will ensure the protection of proprietary and business confidential information to maintain US competitiveness. Our servers and physical locations are all within the United States. Access will be restricted and monitored to maintain economic competitiveness as well as US national, homeland, and economic security.

While no research will be carried out that involves human participants, the rights of all members of the team carrying out tasks associated with the Project will be protected. Accountability and traceability are key in the operations at NAM to ensure data is collected accurately. This accountability will be maintained internally through the data access, and only key members of the team will be specifically referred to if/when required. NAM has an ethics policy in place that covers the company and all employees.

Rationale

This Project will involve the design, construction, and commissioning of a new production facility for battery grade synthetic graphite. As such, the Project does not fall into a "research" definition where studies are performed, data is validated, and findings are published. Most data generated under this Project, with the exception of the reporting requirements for the grant, will be considered proprietary to NAM and will not be available for release to the public. The above Data Management Plan therefore only addresses the applicable areas where data is generated, stored or shared.

Large Scale, Energy Efficient, Domestic Production of High-Performance Synthetic Graphite Anode Material for Use in Electric Vehicles and Energy Storage Systems

Area of Interest 2: Commercial-scale Domestic Production of Battery Grade Graphite from Synthetic and Natural Feedstocks

NOVONIX Anode Materials LLC (Chattanooga, TN), Dr. Chris Burns, Principal Investigator

Foreign Entity Participation Waiver Request

a. **Information about the entity:**
    a. Name: NOVONIX Anode Materials LLC (formerly PUREgraphite LLC) ("Applicant" or "NAM")
    b. Point of contact: Dr. Chris Burns [redacted] (b) (4)
    c. Proposed type of involvement with the Applicant: Principal Investigator
    d. UEI number for the proposed foreign participant and any foreign parent organization: [redacted]
        i. NAM DUNS: [redacted] (b) (4)
        ii. Parent company (NOVONIX Limited) [redacted] (b) (4)
b. **Country of incorporation:** NAM, a limited liability company, was formed in Delaware in 2017 under the name PUREgraphite LLC. It is a wholly-owned subsidiary of NOVONIX Limited ("Parent"), a company organized in Queensland, Australia.
    a. The extent of the ownership/level control by foreign entities:
        i. 100% ownership by Parent, a publicly-listed company on the Australian Securities Exchange and Nasdaq
    b. Whether the entity is state owned or controlled:
        i. Neither NAM or Parent are state owned or controlled
    c. A summary of the ownership breakdown of the foreign entity and the percentage of ownership/control by foreign entities, foreign shareholders, foreign state or foreign individuals:
        i. The below is a breakdown of Parent's equity ownership, as of June 10, 2022:

(b) (4)

[redacted]

c. The rationale for proposing a foreign entity participate:

a. Its participation is in the best interest of the U.S. industry and U.S. economic development:

   i. NAM and Parent's core business strategy is aimed at expanding U.S. production of high-performance, synthetic graphite anode materials for use in the electric vehicle and energy storage sectors, which is of critical geopolitical importance. Currently, China dominates both the synthetic and natural graphite markets with 78% and 70% market share, respectively (the rest coming from Japan and Korea). NAM and Parent are on target to bring 10,000 metric tons per year by the end of 2023 and, with this Project, will bring an additional 30,000 metric tons per year to reduce US reliance of importing this key battery component material.

b. The project team has appropriate measures in place to control sensitive information and protect against unauthorized transfer of scientific and technical information:

   i. Parent is a publicly-listed company dually listed on the ASX and the Nasdaq and, as such, is mandated to have the proper protocols in place on the protection and handling of confidential, market and technically sensitive information. All technical project details and intellectual

property is held by NAM (and only required business progress must be announced to the ASX).

c. Adequate protocols exist between the U.S. subsidiary and its foreign parent organization to comply with export control laws and any obligations to protect proprietary information from the foreign parent organization:
    i. NAM is governed by a NAM Board of Directors comprised of: Dr. Chris Burns, Admiral Robert Natter, and Nick Liveris. The governance mechanisms of the NAM Board of Directors are set to ensure compliance with USA export control laws and to protect the handling and management of proprietary information.
d. The work is conducted within the U.S. and the entity acknowledges and demonstrates that it has the intent and ability to comply with the U.S. Manufacturing Plan.
    i. All components of this Project will be based in the United States and additionally has set the following specific and measurable commitments:
        1. Feedstock material will be purchased from United States based suppliers.
        2. The manufacturing facility will be built in the United States.
        3. Furnace systems will be purchased from United States based suppliers.
        4. Graphite produced from the Project will be sold to OEMs and/or energy storage systems in the United States

d. A description of the project's anticipated contributions to the U.S. economy:

a. How the foreign entity's participation will benefit U.S. research, development and manufacturing, including contributions to employment in the U.S. and growth in new markets and jobs in the U.S.
    i. NAM, pursuant to the objectives of this application, plans by 2030: to
        1. Spend over $280M USD purchasing equipment from our USA-based furnace technology partner Harper International.
        2. Spend over $280M USD purchasing precursor material from USA-based Phillips 66 over the decade.
        3. Hire directly over 5,000 FTEs in the USA by 2030 to meet production targets
        4. Supply a key battery raw material, utilizing domestically sourced feedstock material, to
b. How the foreign entity's participation will promote domestic manufacturing of products and/or services.
    i. NAM, pursuant to the objectives of this application, plans to continue investment beyond the successful completion of this project to produce over 100,000 tons of synthetic graphite anode material for use in the domestic electric vehicle and energy storage system lithium-ion battery markets by 2030.

e. A description of why the foreign entity's participation is essential to the project:

a. Parent's participation in the Project is essential as the owner of NAM. NAM is the most advanced USA-based battery-grade synthetic graphite company with established agreements with Samsung SDI, Sanyo Electric and KORE Power along with significant commercial support for this Project.

f. A description of the likelihood of Intellectual Property (IP) being created from the work and the treatment of any such IP:

a. The Project will leverage significant IP contributions from NAM and the Parent along with key IP agreements that are established with Harper International and Phillips 66. While the Project will build off the developed IP, it is not expected to generate significant IP as the focus is on the deployment of production capacity. Any IP generated will be protected by NAM or be protected pursuant to the terms of the IP agreements with Harper International and Phillips 66.

g. **Countries where the work will be performed (Note: if any work is proposed to be conducted outside the U.S., the applicant must also complete a separate request for a foreign work waiver):**

a. All work proposed in this application will be performed in the United States.

Chris burns, PhD—principal investigator, CEO of NAM

Education	Contact Information
• Dalhousie University | Physics | PhD 2015 • Dalhousie University | Physics | MSc 2011 • St. Francis Xavier University | Physics | BSc Advanced Major 2009	(b) (4), (b) (6) [redacted]

Current Positions

NOVONIX, Chattanooga, TN | Co-founder and CEO **2013–Present**

NOVONIX Ltd. (ASX: NVX, Nasdaq: NVX, OTCQX: NVNXF) operates two primary divisions, NOVONIX Anode Materials (NAM) and NOVONIX Battery Technology Solutions (BTS). NAM was established in 2017 to develop and scale the manufacturing of high-performance synthetic graphite for use as battery anode materials in the United States. BTS was founded in 2013 to manufacture high precision charger systems and provide equipment and services to the Li-ion battery community. As CEO of both operating divisions and the group, Dr. Burns oversees all activities within the 140+ person team while focusing on technology and business development.

Research and Professional Experience

(b) (4), (b) (6) [redacted]

[redacted]

(b) (4), (b) (6)

[redacted]

Daniel Deas—Key Personnel, President of NAM

Education	Contact Information
• Community College of the Airforce | Aerospace Engineering | Associates Degree 2003	(b) (4), (b) (6) [redacted]

Current Positions

NOVONIX Anode Materials (NAM), Chattanooga, TN | President, NAM **2022–Present**

Based on his extensive experience with high-heat operations, Mr. Deas was offered a position with NOVONIX Anode Materials to oversee the production of synthetic graphite for use in lithium ion batteries. Mr. Deas built, operated, and managed the [redacted] Mr. Deas is now in charge of all operations at NAM.

Research and Professional Experience

(b) (4), (b) (6)

[redacted]

(b) (4), (b) (6)

[redacted]

(b) (4), (b) (6)

[redacted]

(b) (4), (b) (6)

[redacted]

(b) (4), (b) (6)

[redacted]

(b) (4), (b) (6)

[redacted]

(b) (4), (b) (6)

[redacted]

(b) (4), (b) (6)

[redacted]

Control Number 2678-1792

Approved by OMB
0348-0046

Disclosure of Lobbying Activities

Complete this form to disclose lobbying activities pursuant to 31 U.S.C. 1352
(See reverse for public burden disclosure)

1. Type of Federal Action: a. contract __B__ b. grant c. cooperative agreement d. loan e. loan guarantee f. loan insurance	**2. Status of Federal Action:** a. bid/offer/application __A__ b. initial award c. post-award	**3. Report Type:** a. initial filing __A__ b. material change

4. Name and Address of Reporting Entity: X____ Prime _____ Subawardee Tier_____, if Known: **NOVONIX Anode Materials LLC** **353 Corporate Place** **Chattanooga, TN 37419** **Congressional District, if known:** TN-03	**5. If Reporting Entity in No. 4 is Subawardee,** Enter Name and Address of Prime: **Congressional District, if known:**
6. Federal Department/Agency: **U.S. Department of Energy**	**7. Federal Program Name/Description:** BIL Battery Materials Processing and Manufacturing CFDA Number, *if applicable*:
7. **Federal Action Number,** *if known:* DE-FOA-0002678	**9. Award Amount**, *if known:* $ 150,000,000
10. a. Name and Address of Lobbying Registrant *(if individual, last name, first name, MI):* Bridge Public Affairs, PO Box 171 Chattanooga, TN 37402	**b. Individuals Performing Services** *(including address if different from No. 10a)* *(last name, first name, MI):* Womack, Todd B. Gehring, Tim S. Wiles, Brent K.
11. Information requested through this form is authorized by title 31 U.S.C. section 1352. This disclosure of lobbying activities is a material representation of fact upon which reliance was placed by the tier above when this transaction was made or entered into. This disclosure is required pursuant to 31 U.S.C. 1352. This information will be reported to the Congress semi-annually and will be available for public inspection. Any person who fails to file the required disclosure shall be subject to a civil penalty of not less than $10,000 and not more than $100,000 for each such failure.	**Signature** [redacted] (b) (6) **Print Name: Chris Burns** **Title: CEO** **Telephone No.:** [redacted] (b) (6) **Date: 06/27/2022**
Federal Use Only	**Authorized for Local Reproduction** **Standard Form - LLL (Rev. 7-97)**

INSTRUCTIONS FOR COMPLETION OF SF-LLL, DISCLOSURE OF LOBBYING ACTIVITIES

This disclosure form shall be completed by the reporting entity, whether subawardee or prime Federal recipient, at the initiation or receipt of a covered Federal action, or a material change to a previous filing, pursuant to title 31 U.S.C. section 1352. The filing of a form is required for each payment or agreement to make payment to any lobbying entity for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with a covered Federal action. Complete all items that apply for both the initial filing and material change report. Refer to the implementing guidance published by the Office of Management and Budget for additional information.

1. Identify the type of covered Federal action for which lobbying activity is and/or has been secured to influence the outcome of a covered Federal action.

2. Identify the status of the covered Federal action.

3. Identify the appropriate classification of this report. If this is a followup report caused by a material change to the information previously reported, enter the year and quarter in which the change occurred. Enter the date of the last previously submitted report by this reporting entity for this covered Federal action.

4. Enter the full name, address, city, State and zip code of the reporting entity. Include Congressional District, if known. Check the appropriate classification of the reporting entity that designates if it is, or expects to be, a prime or subaward recipient. Identify the tier of the subawardee, e.g., the first subawardee of the prime is the 1st tier. Subawards include but are not limited to subcontracts, subgrants and contract awards under grants.

5. If the organization filing the report in item 4 checks "Subawardee," then enter the full name, address, city, State and zip code of the prime Federal recipient. Include Congressional District, if known.

6. Enter the name of the federal agency making the award or loan commitment. Include at least one organizational level below agency name, if known. For example, Department of Transportation, United States Coast Guard.

7. Enter the Federal program name or description for the covered Federal action (item 1). If known, enter the full Catalog of Federal Domestic Assistance (CFDA) number for grants, cooperative agreements, loans, and loan commitments.

8. Enter the most appropriate Federal identifying number available for the Federal action identified in item 1 (e.g., Request for Proposal (RFP) number; Invitations for Bid (IFB) number; grant announcement number; the contract, grant, or loan award number; the application/proposal control number assigned by the Federal agency). Included prefixes, e.g., "RFP-DE-90-001."

9. For a covered Federal action where there has been an award or loan commitment by the Federal agency, enter the Federal amount of the award/loan commitment for the prime entity identified in item 4 or 5.

10. (a) Enter the full name, address, city, State and zip code of the lobbying registrant under the Lobbying Disclosure Act of 1995 engaged by the reporting entity identified in item 4 to influence the covered Federal action.

    (b) Enter the full names of the individual(s) performing services, and include full address if different from 10(a). Enter Last Name, First Name, and Middle Initial (MI).

11. The certifying official shall sign and date the form, print his/her name, title, and telephone number.

According to the Paperwork Reduction Act, as amended, no persons are required to respond to a collection of information unless it displays a valid OMB control Number. The valid OMB control number for this information collection is OMB No. 0348-0046. Public reporting burden for this collection of information is estimated to average 10 minutes per response, including time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding the burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to the Office of Management and Budget, Paperwork Reduction Project (0348-0046), Washington, DC 20503

NOVONIX Anode Materials LLC plans to build the first large scale domestic manufacturing plant for high performance synthetic graphite targeted at the electric vehicle industry with 30,000 metric tons per year of capacity by 2025.

Technology Summary

NOVONIX Anode Materials LLC (NAM) is currently building its first mass production site in the United States which will produce 10,000 metric tons/year of battery grade synthetic graphite. The Project will build a new plant producing 30,000 metric tons/year of graphite targeted at the electric vehicle industry

The Project will be the first large scale domestic manufacturing facility for battery-grade synthetic graphite that will provide material to support the production of more than 500,000 electric vehicles annually.

The Project involves strong partnerships, commitments, and support from domestic technology and equipment suppliers such as Phillips 66 and Harper International, validation partners such as Oak Ridge and Argonne National Labs, and numerous cell manufacturers and automotive OEMs.

Requested EERE Funds and Proposed Applicant Cost Share

Section A - Budget Summary					
	Federal	Cost Share		Total Costs	Cost Share %
Budget Period (BP) 1	[redacted]				
Budget Period 2	[redacted]				
Budget Period 3	[redacted]				
Budget Period 4	[redacted]				
Total	$150,000,000	$877,260,704		$1,027,260,704	85.40%

(b) (4)

Section B - Budget Categories	
Category	[redacted]
a. Personnel	
b. Fringe Benefits	
c. Travel	
d. Equipment	
e. Supplies	
f. Contractual	
Sub-recipient	
Vendor	
FFRDC	
Total Contractual	
g. Construction	
h. Other Direct Costs	
Total Direct Costs	
i. Indirect Charges	
Total Costs	

Project Objectives

Reach production of 30,000 metric tons per year of synthetic graphite qualified by a Tier 1 cell manufacturer or automotive OEM.

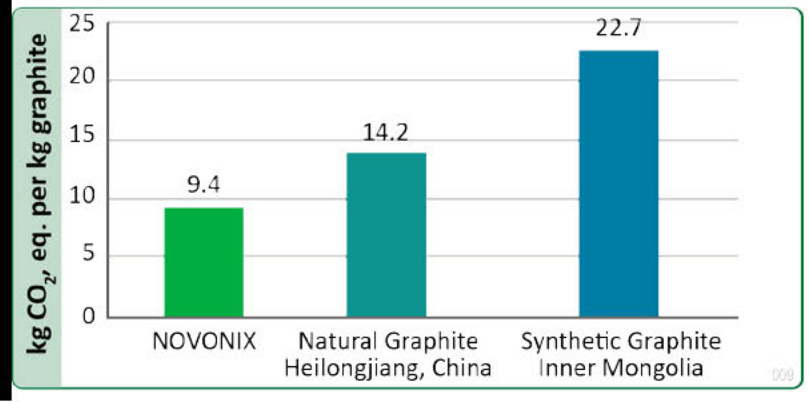
Significantly reduce U.S. reliance on importing battery-grade graphite from China, Korea, and Japan.

Create [redacted] (b) (4) clean energy, good paying jobs while demonstrating our commitment to uplifting every corner of Chattanooga through community engagement, innovative workforce development programming, and active recruitment among traditionally marginalized communities.

Technology Impact

NAM's process technology has been shown to reduce carbon intensity, thus promoting a cleaner, domestic supply chain of key battery materials.

Material produced during the Project will be provided to various third-party partners including National Labs and cell manufacturer and automotive OEMs to validate the performance and qualify the material for use in electric vehicles.



Key Submission Information

Area of Interest 2, Commercial-scale Domestic Production of Battery-Grade Graphite from Synthetic and Natural Feedstocks

Project Title: Large Scale, Energy Efficient, Domestic Production Of High-performance Synthetic Graphite Anode Material For Use In Electric Vehicles And Energy Storage Systems

Prime Recipient: NOVONIX Anode Materials LLC
Principal Investigator: Dr. Chris Burns

Key Project Personnel: Daniel Deas (NAM), John Hoffman (NAM), Robert LaLonde (Clark), Rick Hutter (Clark), Todd Arend (Bergmann)

Statement of Project Objectives

NOVONIX Anode Materials LLC

"Large Scale, Energy Efficient, Domestic Production of High-Performance Synthetic Graphite Anode Material for Use in Electric Vehicles and Energy Storage Systems"

A. OBJECTIVE

NOVONIX Anode Materials LLC (NAM) will have successfully commissioned 30,000 metric tons per year of production capacity of synthetic graphite for use in electric vehicles by the end of the Project (2025) in a facility that will allow for expansion to 75,000 metric tons per year of production capacity. The product will meet specifications and have passed testing by electric vehicle (EV) battery manufacturers and will have the capacity to support the domestic production of an estimated 500,000 EVs annually.

B. SCOPE OF WORK

The Project will be conducted in 4 budget periods:

1. **Budget Period 1** covers the design and construction of a ~[redacted] ft^2 manufacturing facility to house NAM's Mass Production Lines (MPLs). This building will be capable of producing 30,000 metric tons of electric vehicle battery grade synthetic graphite at the end of the Project. Final civil, electrical, and rail design considerations will be completed for permitting and construction in the first months of the Project**.**
2. **Budget Period 2** covers the procurement and installation of all processing equipment required to produce material meeting offtake partner requirements. The most important process component is our furnace technology provided through the partnership indicated in the Technical Volume. Installation will occur on equipment arrival.
3. **Budget Period 3** involves the commissioning and confirmation of operation on all process equipment. As equipment is installed, NAM will hire and train labor to support the commissioning and operation of the process equipment. With equipment partner engineers, each piece of process equipment is commissioned to ensure expected product output and machine operation.
4. **Budget Period 4** involves the independent validation of NAM produced materials, as well as completion of the customer qualification process on materials mass produced from the commissioned product lines. Qualification will occur through third party testing. In parallel, mass production samples meeting offtake partner specifications will be sampled in increasing quantities for validation. Additionally, process stability and quality control performance will be proved to the offtake partners through a production part approval process (PPAP).

C. TASKS TO BE PERFORMED

The following tasks will be conducted:

All Budget Periods

Overall Project Management and Planning: NAM will perform project management activities to include project planning and control, subcontractor control, financial management, data management, management of supplies and/or equipment, risk management, and reporting as required to successfully achieve the overall objectives of the Project.

Task 0.0 – Project Management and Planning:

NAM will develop and maintain a Project Management Plan (PMP) in accordance with the PMP identified in the Federal Assistance Reporting Checklist and Instructions. NAM will manage and implement the Project in accordance with the PMP.

Task 0.1- Kick-Off Meeting:

NAM will participate in a project kickoff meeting with the DOE within 30 days of initiating the Project.

Budget Period 1: Manufacturing Plant Buildout

Task 1 – Engineering Design Review and Sign-Off:

Subtask 1.1 – Civil design review and signoff. Engineer site layout and orientation of manufacturing building on purchased site.

Subtask 1.2 – Building design review and signoff. Complete engineering for build construction including the foundation and structure, building envelope, and offices & amenities.

Subtask 1.3 – Electrical switchyard and central utilities design and signoff. Complete engineering design for the electrical switchyard and the central utilities building. This will be based on a forward-looking design basis for the full site buildout.

Subtask 1.4 – [redacted]

(b) (4)

Subtask 1.5 – [redacted]

Task 2 – Permitting:

Subtask 2.1 – Site data collection. All previous surveys and environmental studies related to permit requirements will be received from the information holders. Any additional studies for permitting will be completed.

Subtask 2.2 – Permits for construction application and submission. Each required permit application for relevant localities will be completed and submitted to the appropriate regulatory agencies for review and approval.

Subtask 2.3 A – Air Permitting. Air permitting required for any emission equipment installation and operation.

Subtask 2.4 – [redacted] (b) (4) [redacted]

Subtask 2.5 – [redacted]

Task 3 – Construction Labor Procurement:

Subtask 3.1 – Project scoping, bid submission and acceptance. Construction manager to send scope of work to area construction groups. Bids will be compared and accepted with considerations of budget, capabilities, and timelines.

Task 4 – Project Materials Procurement:

Subtask 4.1 – Site construction material procurement. Significant raw materials are required for the site construction related to the Project. Quantities must be determined in the engineering phase of Task 1.1 and ordered according to the project management schedule.

Subtask 4.2 A – Utility installation material procurement. NAM will work with local utilities and groups to ensure long lead items are procured for utilities. This includes substation components, [redacted]

Task 5 – Site Preparation:

Subtask 5.1 – Site grading and preparation. Site for facility must be graded according to building specifications and land topography. Rail unloading, utility placement and parking are all considered in the final site engineering determining these requirements.

Subtask 5.2 – Rail and Road site upgrades. Rail spur on site will need to be upgraded to accommodate delivery to NAM's site as well as future expansion considerations. Road access must also be considered as products will be sold via box trucks.

Task 6 – Utility Installation:

Subtask 6.1 – Central Utility Building (CUB) Install. Utilities required for plant operation will be centralized in a single key area. Key units for utility deployment and trenches to main building must be installed.

Subtask 6.2 A – Process Utility Install. Utilities distribution from the CUB. These include process chilled water, compressed air, and transformed power.

Subtask 6.3 A – [redacted]

Subtask 6.4 A – Switchyard installation. The switchyard will be the longest installation of any utility. [redacted] Five megawatts of power will be available for the construction and startup phase of the plant. Awaiting lead items will cross BP2 into BP3

Task 7 – Facility Buildout – Production Building:

Subtask 7.1 – Foundation and parking construction. Construction of facility foundation for further site erecting.

Subtask 7.2 – [redacted]

Subtask 7.3 – Utility routing and installation. Utilities will be brought from the CUB to their respective process areas where utilities are required.

The table below shows the technical, SMART, and GO/NG milestones during this Budget Period.

Milestone	Type	Description
Submit completed engineering design	Technical	Complete engineering for build construction including the foundation and structure, building envelope, and offices & amenities.
Submit completed electrical switchyard & utility design	Technical	Complete engineering design for the electrical switchyard and the central utilities building. This will be based on a forward-looking design basis for the full site buildout.
All site materials obtained to begin construction.	Technical	Significant raw materials are required for the site construction related to the Project. Quantities must be determined in the engineering phase of Task 1.0 and ordered according to the Project management schedule.
Site graded according to building requirements. Rail and Road upgrades commence	Technical	Site for facility must be graded according to building specifications and land topography. Rail unloading, utility placement and parking are all considered in the final site engineering determining these requirements.
Installation of utility building complete	Technical	Utilities required for plant operation will be centralized in a single key area. Key units for utility deployment and trenches to main building must be installed.
Air Compressors, Air Dryers, and Buffer Receivers are installed. Air coolers and chillers are installed. Main power utilities are installed.	Technical	Utilities distribution from the CUB. These include process chilled water, compressed air, and transformed power.
[redacted] (b) (4) [redacted] Exhaust scrubbing systems purifying exhausts to permitted levels are installed.	Technical	Installation of required tanks for initial phases of production. [redacted]
Switchgear site erected.	Technical	The switchyard will be the longest installation of any utility. Procurement and site erecting will occur right away while long lead items are on order.
Production space construction complete	**SMART**	Utilities and structure construction complete and prepared for installation of processing equipment and completion of [redacted] ft^2 of production space.
Permitting complete	**SMART GO/NG**	Permitting has been accepted by agencies to allow for equipment installation and operation and confirmed ready to move the Project forward.

Budget Period 2: Process Equipment Procurement and Installation

Task Continuing from Budget Period 1:

Subtask 2.3 B – Air Permitting. Receive final approval of the air permitting with over run into BP2 due to the permitting authority lead time.

Subtask 4.2 B – Utility installation material procurement. Some of the procured items will take many months to arrive on site. This waiting period will flow through BP1, BP2, and BP3.

Subtask 6.2 B – Process Utility Install. Some utilities require long lead items. These will be received within BP1 through much of BP2.

Subtask 6.3 B – [redacted] (b) (4) [redacted]

Subtask 6.4 B – Switchyard installation. [redacted] (b) (4) [redacted] Five megawatts of power will be available for the construction and startup phase of the plant, with full service available by [redacted]. Awaiting lead items will cross BP2 into BP3.

Task 8: Facility Buildout – Production Building Continued:

Subtask 8.1 – Structural area built to meet production height specifications and architectural ratings. Building of actual production structure where process equipment installation will occur according to Task 2.2.

Subtask 8.2 – Roofing built to required specification to ensure environmentally controlled production space. Roofing installed on structure.

Subtask 8.3 – [redacted] (b) (4) [redacted]

Subtask 8.4 – Offices, labs, and amenities. Offices are built to house project engineering staff and operations to support process equipment commissioning.

Task 9 – Processing Equipment Procurement and Installation:

Subtask 9.1 – Vendor request for quote**.** All equipment vendors and partners will provide updated quotes with their anticipated equipment production schedule.

Task 10 – Processing Equipment Installation:

Subtask 10.1 A – [redacted] (b) (4) [redacted]

Subtask 10.2 A – [redacted]

Subtask 10.3 A – [redacted]

The table below shows the technical, SMART, and GO/NG milestones during this Budget Period.

Milestone	Type	Description
Structure is built with [redacted] (b) (5) [redacted]	Technical	Building of actual production structure where [redacted] will occur according to Task 10. This buildout phase will occur in BP2 on the rolling construction schedule.
Distribution completed to equipment installation areas for connection to equipment upon installation.	Technical	Utilities will complete distribution in BP2 on the rolling construction schedule.
• All process equipment meeting required conditions quoted for purchase. • Process equipment purchase orders submitted. Equipment vendors provide schedule of equipment manufacturing and deployment to meet project deployment schedule.	Technical	All equipment vendors and partners will provide updated quotes with their anticipated equipment production schedule.
Production lines build out [redacted] (b) (4) [redacted]	Technical	[redacted]
Securing Financing for remaining equipment	**SMART GO/NG**	Securing sufficient financing needed to place remaining equipment orders.

Budget Period 3: Process Equipment Commissioning

Task Continuing from Budget Period 2:

Subtask 10.1 B – [redacted]

Subtask 10.2 B – (b) (4) [redacted]

Subtask 10.3 B – [redacted]

Task 11 – Processing Equipment Commissioning:

Subtask 11.1 A – Material confirmation in commissioning. Material samples will be produced through each process step during commissioning. Material commissioned from previous steps will be utilized to commission next steps. Confirmation of equipment operation, intended output, efficiency, yield, and production cost.

Task 12 – Production Labor Onboarding and Training:

Subtask 12.1 – Hiring of commissioning staff. NAM to recruit and onboard staff for commissioning, including engineers, operators, management, and project managers.

Subtask 12.2 – Hiring of full production staff. Second phase of hiring for staff once standard work is in place and production is expanding. Additionally hiring of QC laboratory staff.

The table below shows the technical, SMART, and GO/NG milestones during this Budget Period.

Milestone	Type	Description
Installation of furnaces [redacted] (b) (4) [redacted]	Technical	[redacted] Rolling into BP3 based on equipment deliveries.
Production lines build out [redacted] (b) (4) is complete.	Technical	Complete installation of [redacted] Rolling into BP3 based on equipment deliveries.
• Fully processed sample produced from each unit operation at scale confirmed internally to match intended specification. • Small scale samples validated internally through NAM testing capabilities.	Technical	Material samples will be produced through each process step during commissioning. Material commissioned from previous steps will be utilized to commission next steps. Confirmation of equipment operation and intended output.
Hiring of numbers completed according to projections and installed capacity.	Workforce	NAM to recruit and onboard staff for commissioning, including engineers, operators, management, and project managers.
Satisfy material specifications	**SMART**	Samples satisfying material specifications from commissioning trials on single production line: ≥[redacted] mAh/g specific capacity and matching customer required physical and electrochemical properties.
Performance Specifications met	**SMART** **GO/NG**	The first production line (MPL1) meets performance specifications and is validated by third party testing facilities.

Budget Period 4: Material Evaluation and Delivery

Task Continuing from Budget Period 3:

Subtask 11.1 B – Material confirmation in commissioning. All equipment commissioning will require material validation. This will roll through BP4 until the end of the Project.

Task 13 – Finished Goods Qualification:

Subtask 13.1 – Verification of material. Material generated through the process flow as built in the plant will be sent for third party verification of quality. NAM will be able to utilize laboratories familiar with standard and specialized testing practices. Internal qualification through NAM QC laboratory.

Subtask 13.2 – Customer qualification. Mass production products produced in the Project will need to undergo customer evaluation. This process is dependent on customer requirements but involves submitting a representative mass production sample for testing on customer pilot lines.

The table below shows the technical and SMART milestones during this Budget Period.

Milestone	Type	Description
Samples will be internally and externally validated as equipment is installed to ensure proper commissioning.	Technical	All equipment commissioning will require material validation. This will roll through BP4 until the end of the Project.
Samples generated on full mass production process flow utilized validated in third party battery manufacturing and testing.	Technical	Finished graphite generated through the process flow as built in the plant will be sent for third party verification of quality. [redacted] will verify material performance at the full cell level.
Production line meets specifications	**SMART**	One full production line meets performance specifications and is validated by third party testing facilities.
Completion of PPAP documentation.	Technical	All required Production Parts Approval Process documentation prepared and submitted.
Proof of process stability on at least one process line	Technical	Process line analyzed for stability of product specifications.

D. DELIVERABLES

High level reports, briefings, and technical presentations will be provided to the DOE Project Manager monthly and at the completion of each major sub-task with sufficient detail to show the milestones of that task were achieved. In addition, detailed reports will be generated at each of the Go/No-Go project gates to include supporting evidence to continue the Project to the next task.

Budget Period 1 Deliverables: To demonstrate the requirements of Budget Period 1, NAM will provide a report outlining the construction status. This will include a spreadsheet-based tracker of required permit status. Additionally, completion of this construction phase will be provided in a format that outlines photographic progress which will track project activity.

Budget Period 2 Deliverables: Budget Period 2 covers a wide range of milestones from equipment procurement and installation. NAM will provide a report the status of equipment acquisition and installment.

Budget Period 3 Deliverables: The commissioning and confirmation of operation on all process equipment and workforce hiring tasks will take place in Budget Period 3. NAM will provide commissioning confirmation for the installed mass production equipment. Additionally, NAM will provide payroll logs of those hired for this commissioning work.

Budget Period 4 Deliverables: The final Budget Period focuses on the qualification of mass-produced graphite. Material data will be provided back from third party review to confirm quality. Commercial acceptance of these materials will be publicly disclosed according to company disclosure rules.

E. BRIEFINGS AND TECHNICAL PRESENTATIONS

- Quarterly detailed project status-update briefings. Briefings will explain the plans, progress, and results of the technical efforts. These will track milestone progress, indicate if task timing has changed, the reasons for the changes, and any impact this may have on the deliverables.
- Technical paper(s) and presentations as appropriate at technical society meetings, or at technical exchange meetings. Presentations will likely also be requested by local leaders to demonstrate the success of the Project success and promote business in the area.

Large Scale, Energy Efficient, Domestic Production of High-Performance Synthetic Graphite Anode Material for Use in Electric Vehicles and Energy Storage Systems

NOVONIX Anode Materials LLC (Chattanooga, TN),
Principal Investigator: Dr. Chris Burns

Summary for Public Release

NOVONIX Anode Materials LLC ("NAM"), based in Chattanooga, TN, has submitted a full application to the DOE under Area of Interest 2 of DE-FOA-0002678 to expand its domestic production of high-performance, synthetic graphite anode materials through the construction of a new manufacturing facility which will produce 30,000 metric tons per year starting at the end of 2025 (the "Project") with the ability to expand in subsequent years.

NAM, a wholly-owned subsidiary of NOVONIX Limited, was formed in 2017. It has developed significant process technology and experience in producing lower carbon intensity, high-performance, synthetic graphite targeting the electric vehicle and energy storage sectors. Currently, NAM is building its first mass production site in the United States, which will produce 10,000 metric tons per year of battery grade synthetic graphite. The Project will build a new plant producing 30,000 metric tons per year of graphite targeted at the electric vehicle industry to reduce U.S. reliance on importing this key battery component material. China currently dominates both the synthetic and natural graphite markets with 78% and 70% market share, respectively (the rest coming from Japan and Korea). NAM has agreements with downstream customers such as Samsung SDI, Sanyo Electric and KORE Power Inc. and is negotiating additional contractual commitments with Tier 1 OEMs and others. The Project will use raw materials that are primarily sourced domestically, leverage domestic technology and equipment suppliers, and enjoy significant involvement from our community supporters.

The Project involves strong partnerships, commitments and support from domestic technology and equipment suppliers such as Phillips 66 and Harper International, validation partners such as Oak Ridge and Argonne National Labs, and numerous cell manufacturers and automotive OEMs. NAM will deploy its advanced, cost effective and environmentally friendly process technology. This includes the most energy efficient mass production graphitization process that the company developed with Harper International as part of the companies' partnership and focus on advanced process technology. This process technology has been shown through a life cycle assessment conducted by Minviro Limited to provide a ~60% reduction in carbon intensity relative to the traditional Chinese synthetic graphite.

The Project includes significant involvement and support for NAM's local community in Chattanooga, including The University of Tennessee at Chattanooga, Chattanooga State University and Hamilton County Public Schools. It will directly create [redacted] (b) (4) clean-energy, good-paying jobs while demonstrating our commitment to uplifting every corner of Chattanooga through community engagement, innovative workforce development programming, and active recruitment among traditionally marginalized communities. NAM is a critical link in an end-to-end, Made-in-America battery materials supply chain pioneering large-scale, environmentally friendly process technologies, all supported by our strong partnerships and deep-rooted commitment to our community.

Instructions and Summary

Award Number:
Award Recipient: NOVONIX Anode Materials LLC

Date of Submission: 6/30/2022
Form submitted by: NOVONIX Anode Materials LLC (CN: 2678-1972)
(May be award recipient or sub-recipient)

Please read the instructions on each worksheet tab before starting. If you have any questions, please ask your EERE contact!
Do not modify this template or any cells or formulas!

1. If using this form for award application, negotiation, or budget revision, fill out the blank white cells in workbook tabs a. through j. with total project costs. If using this form for invoice submission, fill out tabs a. through j. with total costs for just the proposed invoice and fill out tab k. per the instructions on that tab.
2. Blue colored cells contain instructions, headers, or summary calculations and should not be modified. Only blank white cells should be populated.
3. Enter detailed support for the project costs identified for each Category line item within each worksheet tab to autopopulate the summary tab.
4. The total budget presented on tabs a. through i. must include both Federal (DOE) and Non-Federal (cost share) portions.
5. All costs incurred by the preparer's sub-recipients, vendors, and Federal Research and Development Centers (FFRDCs), should be entered only in section f. Contractual. All other sections are for the costs of the preparer only.
6. Ensure all entered costs are allowable, allocable, and reasonable in accordance with the administrative requirements prescribed in 2 CFR 200, and the applicable cost principles for each entity type: FAR Part 31 for For-Profit entities; and 2 CFR Part 200 Subpart E - Cost Principles for all other non-federal entities.
7. Add rows as needed throughout tabs a. through j. If rows are added, formulas/calculations may need to be adjusted by the preparer. Do not add rows to the Instructions and Summary tab. If your project contains more than five budget periods, consult your EERE contact before adding additional budget period rows or columns.
8. ALL budget period cost categories are rounded to the nearest dollar.

BURDEN DISCLOSURE STATEMENT
Public reporting burden for this collection of information is estimated to average 24 hours per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to Office of Information Resources Management Policy, Plans, and Oversight, AD-241-2 - GTN, Paperwork Reduction Project (1910-5162), U.S. Department of Energy 1000 Independence Avenue, S.W., Washington, DC 20585; and to the Office of Management and Budget, Paperwork Reduction Project (1910-5162), Washington, DC 20503.

SUMMARY OF BUDGET CATEGORY COSTS PROPOSED

The values in this summary table are from entries made in subsequent tabs, only blank white cells require data entry

Section A - Budget Summary

	Federal	Cost Share			Total Costs	Cost Share %	Proposed Budget Period Dates
Budget Period 1	[redacted]	[redacted]			[redacted]	[redacted]	[redacted]
Budget Period 2	[redacted]	[redacted]			[redacted]	[redacted]	[redacted]
Budget Period 3	[redacted]	[redacted]			[redacted]	[redacted]	[redacted]
Budget Period 4	[redacted]	[redacted]			[redacted]	[redacted]	[redacted]
Budget Period 5	[redacted]	[redacted]			[redacted]	[redacted]	[redacted]
Total	$150,000,000	$877,260,704			$1,027,260,704	[redacted]	

Section B - Budget Categories

CATEGORY	Budget Period 1	Budget Period 2	Budget Period 3	Budget Period 4	Budget Period 5	Total Costs	% of Project	Comments (as needed)
a. Personnel	[redacted]							
b. Fringe Benefits								
c. Travel								
d. Equipment								
e. Supplies								
f. Contractual								
Sub-recipient								
Vendor								
FFRDC								
Total Contractual								
g. Construction								
h. Other Direct Costs								
Total Direct Costs								
i. Indirect Charges								
Total Costs						$1,027,260,704	100.00%	

(b) (4)

Additional Explanation (as needed):

a. Personnel

INSTRUCTIONS - PLEASE READ!!!

1. List project costs solely for employees of the entity completing this form. All personnel costs for subrecipients and vendors must be included under f. Contractual.
2. All personnel should be identified by position title and not employee name. Enter the amount of time (e.g., hours or % of time) and the base pay rate and the total direct personnel compensation will automatically calculate. Rate basis (e.g., actual salary, labor distribution report, state civil service rates, etc.) must also be identified.
3. If loaded labor rates are utilized, a description of the costs the loaded rate is comprised of must be included in the Additional Explanation section below. DOE must review all components of the loaded labor rate for reasonableness and unallowable costs (e.g. fee or profit).
4. If a position and hours are attributed to multiple employees (e.g. Technician working 4000 hours) the number of employees for that position title must be identified.
5. Each budget period is rounded to the nearest dollar.

SOPO Task #	Position Title	Budget Period 1			Budget Period 2			Budget Period 3			Budget Period 4			Budget Period 5			Project Total Hours	Project Total Dollars	Rate Basis
		Time (Hrs)	Pay Rate ($/Hr)	Total Budget Period 1	Time (Hrs)	Pay Rate ($/Hr)	Total Budget Period 2	Time (Hrs)	Pay Rate ($/Hr)	Total Budget Period 3	Time (Hrs)	Pay Rate ($/Hr)	Total Budget Period 4	Time (Hrs)	Pay Rate ($/Hr)	Total Budget Period 5			
1	Sr. Engineer **(EXAMPLE!!!)**	2000	$85.00	$170,000	200	$50.00	$10,000	200	$50.00	$10,000	200	$50.00	$10,000	200	$50.00	$10,000	2400	$190,000	Actual Salary
2	Technicians (2)	4000	$20.00	$80,000	0	$0.00	$0	0	$0.00	$0	0	$0.00	$0	0	$0.00	$0	4000	$80,000	Actual Salary
12	[redacted]			[redacted]			[redacted]			[redacted]			[redacted]			[redacted]	[redacted]	[redacted]	[redacted]
12	[redacted]			[redacted]			[redacted]			[redacted]			[redacted]			[redacted]	[redacted]	[redacted]	[redacted]
12	[redacted]			[redacted]			[redacted]			[redacted]			[redacted]			[redacted]	[redacted]	[redacted]	[redacted]
12	[redacted]			[redacted]			[redacted]			[redacted]			[redacted]			[redacted]	[redacted]	[redacted]	[redacted]
12	[redacted]			[redacted]			[redacted]			[redacted]			[redacted]			[redacted]	[redacted]	[redacted]	[redacted]
12	[redacted]			[redacted]			[redacted]			[redacted]			[redacted]			[redacted]	[redacted]	[redacted]	[redacted]
12	[redacted]			[redacted]			[redacted]			[redacted]			[redacted]			[redacted]	[redacted]	[redacted]	[redacted]
12	[redacted]			[redacted]			[redacted]			[redacted]			[redacted]			[redacted]	[redacted]	[redacted]	[redacted]
12	[redacted]			[redacted]			[redacted]			[redacted]			[redacted]			[redacted]	[redacted]	[redacted]	[redacted]
12	[redacted]			[redacted]			[redacted]			[redacted]			[redacted]			[redacted]	[redacted]	[redacted]	[redacted]
12	[redacted]			[redacted]			[redacted]			[redacted]			[redacted]			[redacted]	[redacted]	[redacted]	[redacted]
12	[redacted]			[redacted]			[redacted]			[redacted]			[redacted]			[redacted]	[redacted]	[redacted]	[redacted]
	Total Personnel Costs	0		[redacted]	0		[redacted]			[redacted]	0		[redacted]	0		[redacted]			

Most positions are based on actual payroll information for current employees in these positions; position salaries may fluctuate based on candidate experience levels; a few positions based on local market data based on job advertisements from different companies, salary survey data from Aon Consulting, and local job postings.

[redacted]

b. Fringe Benefits

INSTRUCTIONS - PLEASE READ!!!

1. Fill out the table below by position title. If all employees receive the same fringe benefits, you can show "Total Personnel" in the Labor Type column instead of listing out all position titles.
2. The rates and how they are applied should not be averaged to get one fringe cost percentage. Complex calculations should be described/provided in the Additional Explanation section below.
3. The fringe benefit rates should be applied to all positions, regardless of whether those funds will be supported by Federal Share or Recipient Cost Share.
4. Each budget period is rounded to the nearest dollar.

Labor Type	Budget Period 1			Budget Period 2			Budget Period 3			Budget Period 4			Budget Period 5			Total Project
	Personnel Costs	Rate	Total	Personnel Costs	Rate	Total	Personnel Costs	Rate	Total	Personnel Costs	Rate	Total	Personnel Costs	Rate	Total	
EXAMPLE!!! Sr. Engineer	$170,000	20%	$34,000	$10,000	20%	$2,000	$10,000	20%	$2,000	$10,000	20%	$2,000	$10,000	20%	$2,000	$38,000
			$0			$0			$0			$0			$0	$0
			$0			$0			$0			$0			$0	$0
			$0			$0			$0			$0			$0	$0
			$0			$0			$0			$0			$0	$0
			$0			$0			$0			$0			$0	$0
			$0			$0			$0			$0			$0	$0
			$0			$0			$0			$0			$0	$0
			$0			$0			$0			$0			$0	$0
			$0			$0			$0			$0			$0	$0
			$0			$0			$0			$0			$0	$0
			$0			$0			$0			$0			$0	$0
			$0			$0			$0			$0			$0	$0
			$0			$0			$0			$0			$0	$0
			$0			$0			$0			$0			$0	$0
			$0			$0			$0			$0			$0	$0
			$0			$0			$0			$0			$0	$0
			$0			$0			$0			$0			$0	$0
			$0			$0			$0			$0			$0	$0
			$0			$0			$0			$0			$0	$0
			$0			$0			$0			$0			$0	$0
			$0			$0			$0			$0			$0	$0
			$0			$0			$0			$0			$0	$0
			$0			$0			$0			$0			$0	$0
			$0			$0			$0			$0			$0	$0
Total:	**$0**		**$0**	**$0**		**$0**	**$0**		**$0**	**$0**		**$0**	**$0**		**$0**	**$0**

A federally approved fringe benefit rate agreement, or a proposed rate supported and agreed upon by DOE for estimating purposes is required at the time of award negotiation if reimbursement for fringe benefits is requested. Please check (X) one of the options below and provide the requested information if not previously submitted.

_____ A fringe benefit rate has been negotiated with, or approved by, a federal government agency. A copy of the latest rate agreement is/was included with the project application.*

_____ There is not a current federally approved rate agreement negotiated and available.**

*Unless the organization has submitted an indirect rate proposal which encompasses the fringe pool of costs, please provide the organization's benefit package and/or a list of the components/elements that comprise the fringe pool and the cost or percentage of each component/element allocated to the labor costs identified in the Budget Justification (Form EERE 335.1).

**When this option is checked, the entity preparing this form shall submit an indirect rate proposal in the format provided in the Sample Rate Proposal at https://www.energy.gov/eere/funding/downloads/sample-indirect-rate-proposal-and-profit-compliance-audit, or a format that provides the same level of information and which will support the rates being proposed for use in the performance of the proposed project.

We are not proposing an indirect fringe rate.

c. Travel

INSTRUCTIONS - PLEASE READ!!!

1. Identify Foreign and Domestic Travel as separate items. Examples of Purpose of Travel are subrecipient site visits, DOE meetings, project mgmt. meetings, etc. Examples of Basis for Estimating Costs are past trips, travel quotes, GSA rates, etc.
2. All listed travel must be necessary for performance of the Statement of Project Objectives.
3. Only travel that is directly associated with this award should be included as a direct travel cost to the award.
4. Federal travel regulations are contained within the applicable cost principles for all entity types.
5. Travel costs should remain consistent with travel costs incurred by an organization during normal business operations as a result of the organizations written travel policy. In absence of a written travel policy, organizations must follow the regulations prescribed by the General Services Administration.
6. Columns E, F, G, H, I, J, and K are per trip.
7. The number of days is inclusive of day of departure and day of return.
8. Recipients should enter City and State (or City and Country for International travel) in the Depart from and Destination fields.
9. Each budget period is rounded to the nearest dollar.

SOPO Task #	Purpose of Travel	Depart From	Destination	No. of Days	No. of Travelers	Lodging per Traveler	Flight per Traveler	Vehicle per Traveler	Per Diem Per Traveler	Cost per Trip	Basis for Estimating Costs
	Domestic Travel	**Budget Period 1**									
1	**EXAMPLE!!!** Visit to PV manufacturer			2	2	$250	$500	$100	$160	$2,020	Current GSA rates
										$0	
										$0	
										$0	
										$0	
	International Travel										
										$0	
	Budget Period 1 Total									**$0**	
	Domestic Travel	**Budget Period 2**									
										$0	
										$0	
										$0	
										$0	
	International Travel										
										$0	
	Budget Period 2 Total									**$0**	
	Domestic Travel	**Budget Period 3**									
										$0	
										$0	
										$0	
										$0	
	International Travel										
										$0	
	Budget Period 3 Total									**$0**	
	Domestic Travel	**Budget Period 4**									
										$0	
										$0	
										$0	
										$0	
	International Travel										
										$0	
	Budget Period 4 Total									**$0**	
	Domestic Travel	**Budget Period 5**									
										$0	
										$0	
										$0	
										$0	
	International Travel										
										$0	
	Budget Period 5 Total									**$0**	
	PROJECT TOTAL									**$0**	

Additional Explanation (as needed):

d. Equipment

INSTRUCTIONS - PLEASE READ!!!

1. Equipment is generally defined as an item with an acquisition cost greater than $5,000 and a useful life expectancy of more than one year. Please refer to the applicable Federal regulations in 2 CFR 200 for specific equipment definitions and treatment.

2. List all equipment below, providing a basis of cost (e.g. vendor quotes, catalog prices, prior invoices, etc.). Briefly justify items as they apply to the Statement of Project Objectives. If it is existing equipment, provide logical support for the estimated value shown.

3. During award negotiations, provide a vendor quote for all equipment items over $50,000 in price. If the vendor quote is not an exact price match, provide an explanation in the additional explanation section below. If a vendor quote is not practical, such as for a piece of equipment that is purpose-built, first of its kind, or otherwise not available off the shelf, provide a detailed engineering estimate for how the cost estimate was derived.

4. Each budget period is rounded to the nearest dollar.

SOPO Task #	Equipment Item	Qty	Unit Cost	Total Cost	Basis of Cost	Justification of need
				Budget Period 1		
3,4,5	**EXAMPLE!!!** Thermal shock chamber	2	$70,000	$140,000	Vendor Quote - Attached	Reliability testing of PV modules- Task 4.3
	Budget Period 1 Total			$0		
				Budget Period 2		
9,10	[redacted]					
9,10						
9,10						
9,10						
9,10						
9,10						
9,10						
9,10						
9,10						
9,10						
9,10						
9,10						
9,10						
	Budget Period 2 Total			[redacted]		
				Budget Period 3		
9,10	[redacted]					
9,10						
9,10						
9,10						
9,10						
9,10						
9,10						
9,10						
9,10						
9,10						
9,10						
9,10						
9,10						
	Budget Period 3 Total			[redacted]		
				Budget Period 4		
				$0		
				$0		
				$0		
				$0		
				$0		
				$0		
z	**Budget Period 4 Total**			$0		
				Budget Period 5		
				$0		
				$0		
				$0		
				$0		
				$0		
				$0		
	Budget Period 5 Total			$0		
	PROJECT TOTAL			[redacted]		

(b) (4)

Costs rounded to nearest thousand dollar based on expectation that quotes will change in the future. Installation estimated for equipment that has not been installed. Most of this equipment has already been purchased and installed in either NOVONIX Anode Materials' pilot or first mass production site; therefore, we are confident in the quoted values provided in this budget justification.

e. Supplies

INSTRUCTIONS - PLEASE READ!!!

1. Supplies are generally defined as an item with an acquisition cost of $5,000 or less and a useful life expectancy of less than one year. Supplies are generally consumed during the project performance. Please refer to the applicable Federal regulations in 2 CFR 200 for specific supplies definitions and treatment.

2. List all proposed supplies below, providing a basis of costs (e.g. vendor quotes, catalog prices, prior invoices, etc.). Briefly justify the need for the Supplies as they apply to the Statement of Project Objectives. Note that Supply items must be direct costs to the project at this budget category, and not duplicative of supply costs included in the indirect pool that is the basis of the indirect rate applied for this project.

3. Multiple supply items valued at $5,000 or less used to assemble an equipment item with a value greater than $5,000 with a useful life of more than one year should be included on the equipment tab. If supply items and costs are ambiguous in nature, contact your DOE representative for proper categorization.

4. Add rows as needed. If rows are added, formulas/calculations may need to be adjusted by the preparer.

5. Each budget period is rounded to the nearest dollar.

SOPO Task #	General Category of Supplies	Qty	Unit Cost	Total Cost	Basis of Cost	Justification of need
				Budget Period 1		
4,6	**EXAMPLE!!!** Wireless DAS components	10	$360.00	$3,600	Catalog price	For Alpha prototype - Task 2.4
				$0		
				$0		
				$0		
				$0		
				$0		
				$0		
				$0		
				$0		
	Budget Period 1 Total			**$0**		
				Budget Period 2		
				$0		
				$0		
				$0		
				$0		
				$0		
				$0		
				$0		
				$0		
	Budget Period 2 Total			$0		
				Budget Period 3		
				$0		
				$0		
				$0		
				$0		
				$0		
				$0		
				$0		
				$0		
	Budget Period 3 Total			$0		
				Budget Period 4		
				$0		
				$0		
				$0		
				$0		
				$0		
				$0		
				$0		
				$0		
	Budget Period 4 Total			$0		
				Budget Period 5		
				$0		
				$0		
				$0		
				$0		
				$0		
				$0		
				$0		
				$0		
	Budget Period 5 Total			$0		
	PROJECT TOTAL			**$0**		

Additional Explanation (as needed):

f. Contractual

INSTRUCTIONS - PLEASE READ!!!

1. The entity completing this form must provide all costs related to sub-recipients, vendors, and FFRDC partners in the applicable boxes below.

2. Sub-recipients (partners, sub-awardees): Subrecipients shall submit a Budget Justification describing all project costs and calculations when their total proposed budget exceeds either (1) $250,000 or (2) 25% of total award costs. These sub-recipient forms may be completed by either the sub-recipients themselves or by the preparer of this form. The budget totals on the sub-recipient's forms must match the sub-recipient entries below. A subrecipient is a legal entity to which a subaward is made, who has performance measured against whether the objectives of the Federal program are met, is responsible for programmatic decision making, must adhere to applicable Federal program compliance requirements, and uses the Federal funds to carry out a program of the organization. All characteristics may not be present and judgment must be used to determine subrecipient vs. vendor status.

3. Vendors (including contractors): List all vendors and contractors supplying commercial supplies or services used to support the project. For each Vendor cost with total project costs of $250,000 or more, a Vendor quote must be provided. A vendor is a legal entity contracted to provide goods and services within normal business operations, provides similar goods or services to many different purchasers, operates in a competitive environment, provides goods or services that are ancillary to the operation of the Federal program, and is not subject to compliance requirements of the Federal program. All characteristics may not be present and judgment must be used to determine subrecipient vs. vendor status.

4. Federal Funded Research and Development Centers (FFRDCs): FFRDCs must submit a signed Field Work Proposal during award application. The award recipient may allow the FFRDC to provide this information directly to DOE, however project costs must also be provided below.

5. Each budget period is rounded to the nearest dollar.

SOPO Task #	Sub-Recipient Name/Organization	Purpose and Basis of Cost	Budget Period 1	Budget Period 2	Budget Period 3	Budget Period 4	Budget Period 5	Project Total
2,4	**EXAMPLE!!!** XYZ Corp.	Partner to develop optimal lens for Gen 2 product. Cost estimate based on personnel hours.	$48,000	$32,000	$16,000	$8,000	$4,000	**$108,000**
								$0
								$0
								$0
								$0
								$0
								$0
								$0
								$0
								$0
								$0
		Sub-total	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**

SOPO Task #	Vendor Name/Organization	Purpose and Basis of Cost	Budget Period 1	Budget Period 2	Budget Period 3	Budget Period 4	Budget Period 5	Project Total
6	**EXAMPLE!!!** ABC Corp.	Vendor for developing robotics to perform lens inspection. Estimate provided by vendor.	$0	$32,900	$86,500	$0	$0	**$119,400**
1	Clark Construction Company	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
2	Clark Construction Company	(b) (4)	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
3	Clark Construction Company	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
5	Clark Construction Company	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
4,7,8	Clark Construction Company	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
4,6	Clark Construction Company	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
4,6	Clark Construction Company	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
		Sub-total	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]

SOPO Task #	FFRDC Name/Organization	Purpose and Basis of Cost	Budget Period 1	Budget Period 2	Budget Period 3	Budget Period 4	Budget Period 5	Project Total
13	Argonne National Laboratory	Analytical evaluation of material. Estimate provided by FFRDC.	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
13	Oak Ridge National Laboratory	Analytical evaluation of material. Estimate provided by FFRDC.	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
		Sub-total	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]

	Total Contractual		[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]

Clark has provided a detailed estimate for the cost of constructing the facility and supporting infrastructure; the National Labs have provided estimates based on evaluation work NOVONIX Anode Materials has requested them to do in the future.

g. Construction

PLEASE READ!!!

1. Construction, for the purpose of budgeting, is defined as all types of work done on a particular building, including erecting, altering, or remodeling. Construction conducted by the award recipient is entered on this page. Any construction work that is performed by a vendor or subrecipient should be entered under f. Contractual.

2. List all proposed construction below, providing a basis of cost such as engineering estimates, prior construction, etc., and briefly justify its need as it applies to the Statement of Project Objectives.

3. Each budget period is rounded to the nearest dollar.

Overall description of construction activities: Example Only!!! - Build wind turbine platform

SOPO Task #	General Description	Cost	Basis of Cost	Justification of need
	Budget Period 1			
3	EXAMPLE ONLY!!! Three days of excavation for platform site	$28,000	Engineering estimate	Site must be prepared for construction of platform.
	Budget Period 1 Total	$0		
	Budget Period 2			
	Budget Period 2 Total	$0		
	Budget Period 3			
	Budget Period 3 Total	$0		
	Budget Period 4			
	Budget Period 4 Total	$0		
	Budget Period 5			
	Budget Period 5 Total	$0		
	PROJECT TOTAL	**$0**		

Additional Explanation (as needed):

h. Other Direct Costs

INSTRUCTIONS - PLEASE READ!!!

1. Other direct costs are direct cost items required for the project which do not fit clearly into other categories. These direct costs must not be included in the indirect costs (for which the indirect rate is being applied for this project). Examples are: tuition, printing costs, etc. which can be directly charged to the project and are not duplicated in indirect costs (overhead costs).

2. Basis of cost are items such as vendor quotes, prior purchases of similar or like items, published price list, etc.

3. Each budget period is rounded to the nearest dollar.

SOPO Task #	General Description and SOPO Task #	Cost	Basis of Cost	Justification of need
			Budget Period 1	
5	**EXAMPLE!!!** Grad student tuition - tasks 1-3	$16,000	Established UCD costs	Support of graduate students working on project
	Budget Period 1 Total	$0		
			Budget Period 2	
	Budget Period 2 Total	$0		
			Budget Period 3	
12	[redacted]			
11				
11				
11				
11				
	Budget Period 3 Total	[redacted]		
			Budget Period 4	
11	[redacted]			
11				
11				
11				
	Budget Period 4 Total	[redacted]		
			Budget Period 5	
	Budget Period 5 Total	[redacted]		
	PROJECT TOTAL	[redacted]		

(b) (4)

Cost estimates for commissioning of equipment has been included; the key consumables are industrial gases for furnace commissioning (argon and nitrogen), power consumption for all production equipment, and petcoke (key raw material in synthetic graphite production process) that must be processed to test equipment.

i. Indirect Costs

INSTRUCTIONS - PLEASE READ!!!

1. Fill out the table below to indicate how your indirect costs are calculated. Use the box below to provide additional explanation regarding your indirect rate calculation.

2. The rates and how they are applied should not be averaged to get one indirect cost percentage. Complex calculations or rates that do not do not correspond to the below categories should be described/provided in the Additional Explanation section below. If questions exist, consult with your DOE contact before filling out this section.

3. The indirect rate should be applied to both the Federal Share and Recipient Cost Share.

4. Each budget period is rounded to the nearest dollar.

	Budget Period 1	Budget Period 2	Budget Period 3	Budget Period 4	Budget Period 5	Total	Explanation of BASE
Provide ONLY Applicable Rates:							
Overhead Rate	[redacted]						
General & Administrative (G&A)							
FCCM Rate, if applicable							
OTHER Indirect Rate							
Indirect Costs (As Applicable):							
Overhead Costs							
G&A Costs							
FCCM Costs, if applicable							
OTHER Indirect Costs							
Total indirect costs requested:							

(b) (4)

A federally approved indirect rate agreement, or rate proposed (supported and agreed upon by DOE for estimating purposes) is required if reimbursement of indirect costs is requested. Please check (X) one of the options below and provide the requested information if it has not already been provided as requested, or has changed.

_____ An indirect rate has been approved or negotiated with a federal government agency. A copy of the latest rate agreement is included with this application, and will be provided electronically to the Contracting Officer for this project.

_____ There is not a current, federally approved rate agreement negotiated and available*.

***When this option is checked, the entity preparing this form shall submit an indirect rate proposal in the format provided by your DOE contact, or a format that provides the same level of information and which will support the rates being proposed for use in performance of the proposed project. Additionally, any non-Federal entity that has never received a negotiated indirect cost rate, except for those non-Federal entities described in Appendix VII to Part 200—States and Local Government and Indian Tribe Indirect Cost Proposals, paragraph D.1.b, may elect to charge a de minimis rate of 10% of modified total direct costs (MTDC) which may be used indefinitely.As described in §200.403 Factors affecting allowability of costs, costs must be consistently charged as either indirect or direct costs, but may not be double charged or inconsistently charged as both. If chosen, this methodology once elected must be used consistently for all Federal awards until such time as a non-Federal entity chooses to negotiate for a rate, which the non-Federal entity may apply to do at any time.**

You must provide an explanation (below or in a separate attachment) and show how your indirect cost rate was applied to this budget in order to come up with the indirect costs shown.

Not including indirect costs as part of process application.

Cost Share

PLEASE READ!!!

1. A detailed presentation of the cash or cash value of all cost share proposed must be provided in the table below. All items in the chart below must be identified within the applicable cost category tabs a. through i. in addition to the detailed presentation of the cash or cash value of all cost share proposed provided in the table below. Identify the source organization & amount of each cost share item proposed in the award.

2. Cash Cost Share - encompasses all contributions to the project made by the recipient, subrecipient, or third party (an entity that does not have a role in performing the scope of work) for costs incurred and paid for during the project. This includes when an organization pays for personnel, supplies, equipment, etc. for their own company with organizational resources. If the item or service is reimbursed for, it is cash cost share. All cost share items must be necessary to the performance of the project. **Vendors may not provide cost share.** Any partial donation of goods or services is considered a discount and is not allowable.

3. In Kind Cost Share - encompasses all contributions to the project made by the recipient, subrecipient, or third party (an entity that does not have a role in performing the scope of work) where a value of the contribution can be readily determined, verified and justified but where no actual cash is transacted in securing the good or service comprising the contribution. In Kind cost share items include volunteer personnel hours, the donation of space or use of equipment, etc. The cash value and calculations thereof for all In Kind cost share items must be justified and explained in the Cost Share Item section below. All cost share items must be necessary to the performance of the project. If questions exist, consult your DOE contact before filling out In Kind cost share in this section. Vendors may not provide cost share. Any partial donation of goods or services is considered a discount and is not allowable.

4. Funds from other Federal sources MAY NOT be counted as cost share. This prohibition includes FFRDC sub-recipients. Non-Federal sources include any source not originally derived from Federal funds. Cost sharing commitment letters from subrecipients and third parties must be provided with the original application.

5. Fee or profit, including foregone fee or profit, **are not allowable** as project costs (including cost share) under any resulting award. The project may only incur those costs that are allowable and allocable to the project (including cost share) as determined in accordance with the applicable cost principles prescribed in FAR Part 31 for For-Profit entities and 2 CFR Part 200 Subpart E - Cost Principles for all other non-federal entities.

6. NOTE: A Recipient who elects to employ the 10% de minimis Indirect Cost rate **cannot claim the resulting indirect costs as a Cost Share contribution.**

7. NOTE: A Recipient **cannot claim "unrecovered indirect costs"** as a Cost Share contribution, **without prior approval.**

8. Each budget period is rounded to the nearest dollar.

Recipient Provided Cost Share	Organization/Source	Type (Cash or In Kind)	Cost Share Item	Budget Period 1	Budget Period 2	Budget Period 3	Budget Period 4	Budget Period 5	Total
a. Personnel	NOVONIX Anode Materials	[redacted]							
b. Fringe									
c. Travel									
d. Equipment	NOVONIX Anode Materials								
e. Supplies									
f. Contractual (NOT subrecipient provided)	NOVONIX Anode Materials								
g. Construction									
h. Other	NOVONIX Anode Materials								
i. Indirect									
Total recipient provided cost share									$877,260,704
f. Subrecipient (3rd Party) Provided Cost Share	**Organization/Source**	**Type (Cash or In Kind)**	**Cost Share Item** For simple cost share contributions from a partner provide the detail below; for complex contributions provide a separate budget justification (if required) or a supplementary detailed explanation	**Budget Period 1**	**Budget Period 2**	**Budget Period 3**	**Budget Period 4**	**Budget Period 5**	**Total**
Sub-Recipient cost share									$0
Sub-Recipient cost share									$0
Sub-Recipient cost share									$0
Sub-Recipient cost share									$0
Sub-Recipient cost share									$0
Sub-Recipient cost share									$0
Sub-Recipient cost share									$0
Sub-Recipient cost share									$0
Sub-Recipient cost share									$0
Sub-Recipient cost share									$0
Sub-Recipient cost share									$0
Sub-Recipient cost share									$0
Sub-Recipient cost share									$0
Total subrecipient provided cost share				$0	$0	$0	$0	$0	$0
Total Contractual Cost Share (Sum of Recipient and Subrecipients)				[redacted]					
Grand Total Cost Share All Sources			**Totals**						$877,260,704
			Cost Share Percentage per Budget Period						

(b) (4)

Total Project Cost: $1,027,260,704 **Cost Share Percent of Award: 85.4%**

Additional Explanation (as needed):

Applicant Name: NOVONIX Anode Materials LLC Award Number: 0

Budget Information - Non Construction Programs

OMB Approval No. 0348-0044

Section A - Budget Summary

Grant Program Function or Activity (a)	Catalog of Federal Domestic Assistance Number (b)	Estimated Unobligated Funds		New or Revised Budget			
		Federal (c)	Non-Federal (d)	Federal (e)	Non-Federal (f)		Total (g)
1. Budget Period 1		[redacted]					
2. Budget Period 2							
3. Budget Period 3							
4. Budget Period 4							
5. Budget Period 5							
6. Totals							$1,027,260,704

(b) (4)

Section B - Budget Categories

6. Object Class Categories	Grant Program, Function or Activity					Total (5)
	Budget Period 1	Budget Period 2	Budget Period 3	Budget Period 4	Budget Period 5	
a. Personnel	[redacted]					
b. Fringe Benefits						
c. Travel						
d. Equipment						
e. Supplies						
f. Contractual						
g. Construction						
h. Other						
i. Total Direct Charges (sum of 6a-6h)						
j. Indirect Charges						
k. **Totals** (sum of 6i-6j)						$1,027,260,704
7. Program Income						$0

Applicant Name: NOVONIX Anode Materials LLC Award Number: 0

Budget Information - Non Construction Programs

OMB Approval No. 0348-0044

Section A - Budget Summary

Grant Program Function or Activity (a)	Catalog of Federal Domestic Assistance Number (b)	Estimated Unobligated Funds		New or Revised Budget			
		Federal (c)	Non-Federal (d)	Federal (e)	Non-Federal (f)		Total (g)
1. Budget Period 1		[redacted]					
2. Budget Period 2							
3. Budget Period 3							
4. Budget Period 4							
5. Budget Period 5							
6. Totals					$877,260,704		$1,024,260,704

(b) (4)

Section B - Budget Categories

6. Object Class Categories	Grant Program, Function or Activity					Total (5)
	Budget Period 1	Budget Period 2	Budget Period 3	Budget Period 4	Budget Period 5	
a. Personnel	[redacted]					
b. Fringe Benefits						
c. Travel						
d. Equipment						
e. Supplies						
f. Contractual						
g. Construction						
h. Other						
i. Total Direct Charges (sum of 6a-6h)						
j. Indirect Charges						
k. **Totals** (sum of 6i-6j)						$1,024,260,704
7. Program Income						$0

Letters of Commitment

(b) (4)

[[June 24, 2022

U.S. Department of Energy
Offices of Manufacturing and Energy Supply Chains, and Energy Efficiency and Renewable Energy
1000 Independence Ave SW
Washington, DC 20585

RE: DOE Bipartisan Infrastructure Law (BIL) Battery Materials Processing and Battery Manufacturing Funding Opportunity Announcement (FOA) DE-FOA-0002678
Letter of Commitment- NOVONIX Anode Materials LLC Full Application Control Number: 2678-1792

To Whom It May Concern,

(b) (4)

Notice of Restriction on Disclosure and Use of Data:
This document may contain trade secrets, confidential, proprietary, or privileged information that is exempt from public disclosure. Such information shall be used or disclosed only for evaluation purposes or in accordance with a financial assistance or loan agreement between the submitter and the Government. The Government may use or disclose any information that is not appropriately marked or otherwise restricted, regardless of source.]]

(b) (4)

[redacted]

(b) (4)

US Department of Energy
Office of Manufacturing and Energy Supply Chains (MESC) and
Office of Energy Efficiency and Renewable Energy (EERE)
Funding Opportunity Number: DE-FOA-0002678
Applicant Name: NOVONIX Anode Materials LLC – Control Number 2678-1792

06/27/2022

Letter of Support for NOVONIX Anode Materials LLC

To Whom it May Concern,

(b) (4)

]]

(b) (4)

U.S. Department of Energy, Offices of Manufacturing and Energy Supply Chains, and Energy Efficiency and Renewable Energy
1000 Independence Ave SW
Washington, DC 20585

RE: Bipartisan Infrastructure Law (BIL) Battery Materials Processing and Battery Manufacturing DE-FOA-0002678
Letter of Commitment/ NOVONIX Anode Materials LLC
Full Application Control No. 2678-1792

To Whom It May Concern,

(b) (4)

Sincerely,

[redacted] (b) (4)

[redacted]

[[June 30, 2022

U.S. Department of Energy, Offices of Manufacturing and Energy Supply Chains, and Energy Efficiency and Renewable Energy
1000 Independence Ave SW
Washington, DC 20585

RE: Bipartisan Infrastructure Law (BIL) Battery Materials Processing and Battery Manufacturing DE-FOA-0002678
Letter of Support/ NOVONIX Anode Materials LLC
Full Application Control Number: [2678-1792]

To Whom It May Concern,

[redacted] (b) (4)

Notice of Restriction on Disclosure and Use of Data: This document may contain trade secrets, confidential, proprietary, or privileged information that is exempt from public disclosure Such information shall be used or disclosed only for evaluation purposes or in accordance with a financial assistance or loan agreement between the submitter and the Government The Government may use or disclose any information that is not appropriately marked or otherwise restricted, regardless of source

]]

(b) (4)

June 15, 2022

U.S. Department of Energy, Offices of Manufacturing and Energy Supply Chains, and Energy Efficiency and Renewable Energy

1000 Independence Ave SW

Washington, DC 20585

RE: Bipartisan Infrastructure Law (BIL) Battery Materials Processing and Battery Manufacturing DE-FOA-0002678
Letter of Commitment/ NOVONIX Anode Materials LLC
Full Application Control No. 2678-1792

To Whom It May Concern,

(b) (4)

[redacted]

(b) (4)

June 21, 2022

U.S. Department of Energy, Offices of Manufacturing and Energy Supply Chains, and Energy Efficiency and Renewable Energy

1000 Independence Ave SW

Washington, DC 20585

RE: Bipartisan Infrastructure Law (BIL) Battery Materials Processing and Battery Manufacturing DE-FOA-0002678

Letter of Commitment/ NOVONIX Anode Materials LLC

Full Application Control Number: 2678-1792

To Whom It May Concern,

[redacted]

(b) (4)

[redacted]

June 20, 2022

U.S. Department of Energy, Offices of Manufacturing and Energy Supply Chains, and
Energy Efficiency and Renewable Energy
1000 Independence Ave SW
Washington, DC 20585

RE: Bipartisan Infrastructure Law (BIL) Battery Materials Processing and Battery Manufacturing DE-FOA-0002678
Letter of Commitment/ NOVONIX Anode Materials LLC
Full Application Control No. 2678-1792

To Whom It May Concern

(b) (4)

[redacted]

[redacted]

(b) (4)

June 21, 2022

U.S. Department of Energy, Offices of Manufacturing and Energy Supply Chains, and Energy Efficiency and Renewable Energy

1000 Independence Ave SW

Washington, DC 20585

RE: Bipartisan Infrastructure Law (BIL) Battery Materials Processing and Battery Manufacturing DE-FOA-0002678
Letter of Commitment/ NOVONIX Anode Materials LLC
Full Application Control No. 2678-1792

To Whom It May Concern,

(b) (4)

[redacted]

[redacted]

[redacted]

[redacted]

[redacted]

[redacted]

[redacted]

(b) (4)

June 28, 2022

U.S. Department of Energy, Offices of Manufacturing and Energy Supply Chains, and Energy Efficiency and Renewable Energy

1000 Independence Ave SW

Washington, DC 20585

RE: Bipartisan Infrastructure Law (BIL) Battery Materials Processing and Battery Manufacturing DE-FOA-0002678

Letter of Commitment/ NOVONIX Anode Materials LLC

Full Application Control No. 2678-1792

To Whom It May Concern,

[redacted]

(b) (4)

[redacted]

[redacted]

(b) (4)

June 22, 2002

U.S. Department of Energy, Offices of Manufacturing and Energy Supply Chains, and Energy Efficiency and Renewable Energy
1000 Independence Ave SW
Washington, DC 20585

RE: Bipartisan Infrastructure Law (BIL) Battery Materials Processing and Battery Manufacturing DE-FOA-0002678
Letter of Commitment/ NOVONIX Anode Materials LLC
Full Application Control Number: Control No. 2678-1792

To Whom It May Concern,

[redacted]

(b) (4)

[redacted]

[redacted]

(b) (4)

June 17, 2022

U.S. Department of Energy, Offices of Manufacturing and Energy Supply Chains, and Energy Efficiency and Renewable Energy
1000 Independence Ave SW
Washington, DC 20585

RE: Bipartisan Infrastructure Law (BIL) Battery Materials Processing and Battery Manufacturing DE-FOA-0002678
Letter of Commitment/ NOVONIX Anode Materials LLC
Full Application Control No. 2678-1792

To Whom It May Concern,

(b) (4)

[redacted]

[redacted]

Letters of Support

[redacted]

(b) (4)

The Honorable Jennifer Granholm
Secretary of Energy
1000 Independence Ave., S.W.
Washington, D.C. 20585

Dear Secretary Granholm,

[redacted]

(b) (4)

[redacted]

(b) (4), (b) (6)

[redacted]

[redacted]

(b) (4)

U.S. Department of Energy
1000 Independence Ave SW
Washington, DC 20585

RE: Bipartisan Infrastructure Law (BIL) Battery Materials Processing and Battery Manufacturing DE-FOA-0002678
Letter of Support/ NOVONIX Anode Materials LLC
Full Application Control No. 2678-1792

To Whom It May Concern,

[redacted]

(b) (4)

[redacted]

[redacted]

(b) (4)

[redacted]

[redacted]

[redacted]

(b) (4)

June 24, 2022

U.S. Department of Energy
1000 Independence Ave SW
Washington, DC 20585

RE: Bipartisan Infrastructure Law (BIL) Battery Materials Processing and Battery Manufacturing DE-FOA-0002678
Letter of Support/ NOVONIX Anode Materials LLC
Full Application Control No. 2678-1792

To Whom It May Concern,

[redacted]

(b) (4)

[redacted]

(b) (4), (b) (6)

[redacted]

[redacted]

(b) (4)

June 21, 2022

U.S. Department of Energy, Offices of Manufacturing and Energy Supply Chains, and Energy Efficiency and Renewable Energy
1000 Independence Ave SW
Washington, DC 20585

RE: Bipartisan Infrastructure Law (BIL) Battery Materials Processing and Battery Manufacturing
DE-FOA-0002678
Letter of Support/ NOVONIX Anode Materials LLC
Full Application Control No. 2678-1792

To Whom It May Concern,

[redacted]

(b) (4)

[redacted]

[redacted]

(b) (4)

June 27, 2022

U.S. Department of Energy
1000 Independence Ave SW
Washington, DC 20585

RE: Bipartisan Infrastructure Law (BIL) Battery Materials Processing and Battery Manufacturing DE-FOA-0002678
Letter of Support/ NOVONIX Anode Materials LLC
Full Application Control No. 2678-1792

To Whom It May Concern,

[redacted]

(b) (4)

[redacted]

[redacted]

(b) (4)

June 22, 2022

U.S. Department of Energy
1000 Independence Ave SW
Washington, DC 20585

RE: Bipartisan Infrastructure Law (BIL) Battery Materials Processing and Battery Manufacturing DE-FOA-0002678
Letter of Support/ NOVONIX Anode Materials LLC
Full Application Control No. 2678-1792

To Whom It May Concern,

[redacted]

(b) (4)

[redacted]

[redacted]

A18—Environmental Information Volume

A—Environmental Information Describing the Project and Project Sites

A.1—Summary

NOVONIX Anode Materials (NAM) is proposing to build, own, and operate a new ~[redacted] ft^2 U.S.-based facility to produce 30,000 metric tons per year of high-performance, energy efficient battery-grade synthetic graphite, which will be used to support the electrification of the domestic transportation fleet and growth in grid-scale energy storage systems (ESS). *Exhibit 1* shows the Project timeline.

The introduction of this capacity in the North American supply of domestic battery materials, which is currently running at a deficit, will help reduce cost and supply barriers for the industry as a whole. The facility will use NAM's innovative first of its kind process technology to domestically produce battery-grade synthetic graphite that has better performance and is more environmentally friendly than currently available anode materials on the market.

NAM's production process is more cost-effective and environmentally friendly than current production methods and offers battery makers a major supply chain advantage. The facility will scale up to 30,000 metric tons per year of production capacity as early as Q4 of 2025, significantly reducing the U.S.'s reliance on imported synthetic graphite, which is currently almost exclusively sourced from China by battery manufacturers.

The project is estimated to create approximately [redacted] jobs. NAM is committed to investing in workforce development programs and supporting a local talent pipeline to ensure community engagement and economic benefit from its investments. In partnership with the local public education system, [redacted] In November 2021, Phillips 66, headquartered in Houston, TX, acquired a 16% stake in NAM's parent company.

(b) (4)

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[redacted]

The project's projected output of 30,000 metric tons of synthetic graphite per year would support roughly 30 GWh of cell manufacturing and would supply 500,000 EV battery packs per year (assuming 60kWh average battery pack size).

[redacted] (b) (4) [redacted] and use of clean, renewable energy powered induction heating bear a significantly lower impact to the environment that the standard Acheson process in use by other producers. [redacted]

There are currently no facilities that we are aware of that contain the specific requirements to support our unique process. [redacted] The Applicant was fortunate to find a brownfield site for its for its mass production site, which is underway in Chattanooga, TN currently and is a ~404,000 ft^2 facility that met many requirements but still required significant investment in facilities upgrades. The increased scale of this site requires a custom designed facility that must be built as a greenfield project.

The proposed site is located in Chattanooga, TN, in an industrial park created by the city called Enterprise South. [redacted]. Utilities are present and will support all project requirements. [redacted] (b) (4) [redacted] All are included in the Appendices.

A.2—Proposed Project and Its Alternatives

A.2. a—Proposed Project

The project objective is to construct a new [redacted] ft^2 facility to meet the annual production output goals of 30,000 metric tons of EV grade synthetic graphite. [redacted] both of which are currently supported by the Enterprise South property.

The physical site in question for the construction and operation of this proposed facility is a 182-acre parcel of property, located at the corner intersection of Highway 58 and Ferdinand Piech Way in Chattanooga, TN. The geolocation of the proposed site location is:

» Hickory Valley Road
Chattanooga, TN 37421
35°06'13.6"N 85°08'48.6"W

Exhibit 2 shows an aerial rendition of the site plan.

Throughout this document, the above geolocation shall be referred to as "Enterprise South". The site is a dormant industrial brownfield site, having previously served as a small portion of the overall location of the Volunteer Army Ammunition Plant (VAAP), which at its largest point occupied 7,312 acres. From 1942 to 1977, the VAAP was used by the Army for the production and storage of 2, 4, 6-trinitrotoluene (TNT), as well as production of ammonium nitrate fertilizer under contract by CF Industries from 1965 to 1985.

(b) (4)

[redacted]

In 1977, the production and storage of TNT was ceased, and the site was placed on the Army inactive list. Ammonium nitrate production ceased in 1985 when the commercial lease expired. The site sat dormant until 1995, when a $5 million dollar contract was awarded to reactivate one of the TNT manufacturing lines. However, the work was never completed before the contract expired. In 1999, the facility was declared excess by the Army and the property was transferred and sold to the City of Chattanooga and Hamilton County.

A development committee was initiated to form what is now the Enterprise South Industrial Park (ESIP) to make use of the former VAAP facility. Appendix A "Historic American Engineering Record, National Park Service, 1983" outlines the historical construction, operation, deactivation, and eventual demolition of the VAAP facility and its structures.

As part of the overall long-term plan by the city and county for the site conversion and development of the property from an explosives manufacturing facility to an industrial park, extensive environmental, geotechnical, archaeological, historic, and engineering studies and memorandums of understanding were completed by the ESIP, federal and state level governmental agencies, the Chattanooga Chamber of Commerce, and local engineering and consulting firms. These studies are referenced throughout this document as the best currently available documentation on the parcel and are contained in the appendices as reference material.

NAM remains highly interested in using the property for a solar array as well. The project does not require waste storage or treatment facilities; nor would the site be located near waterways or sensitive habitats that could be disturbed by the construction of the site or processing of material at the facility. The attached Appendix B "USACE Hydrologic Determination" as well as Appendix C "Revised summary of findings" outline that no waterways are located in or will be affected by development of the parcel, see *Exhibit 3* for a topographical map of the area.

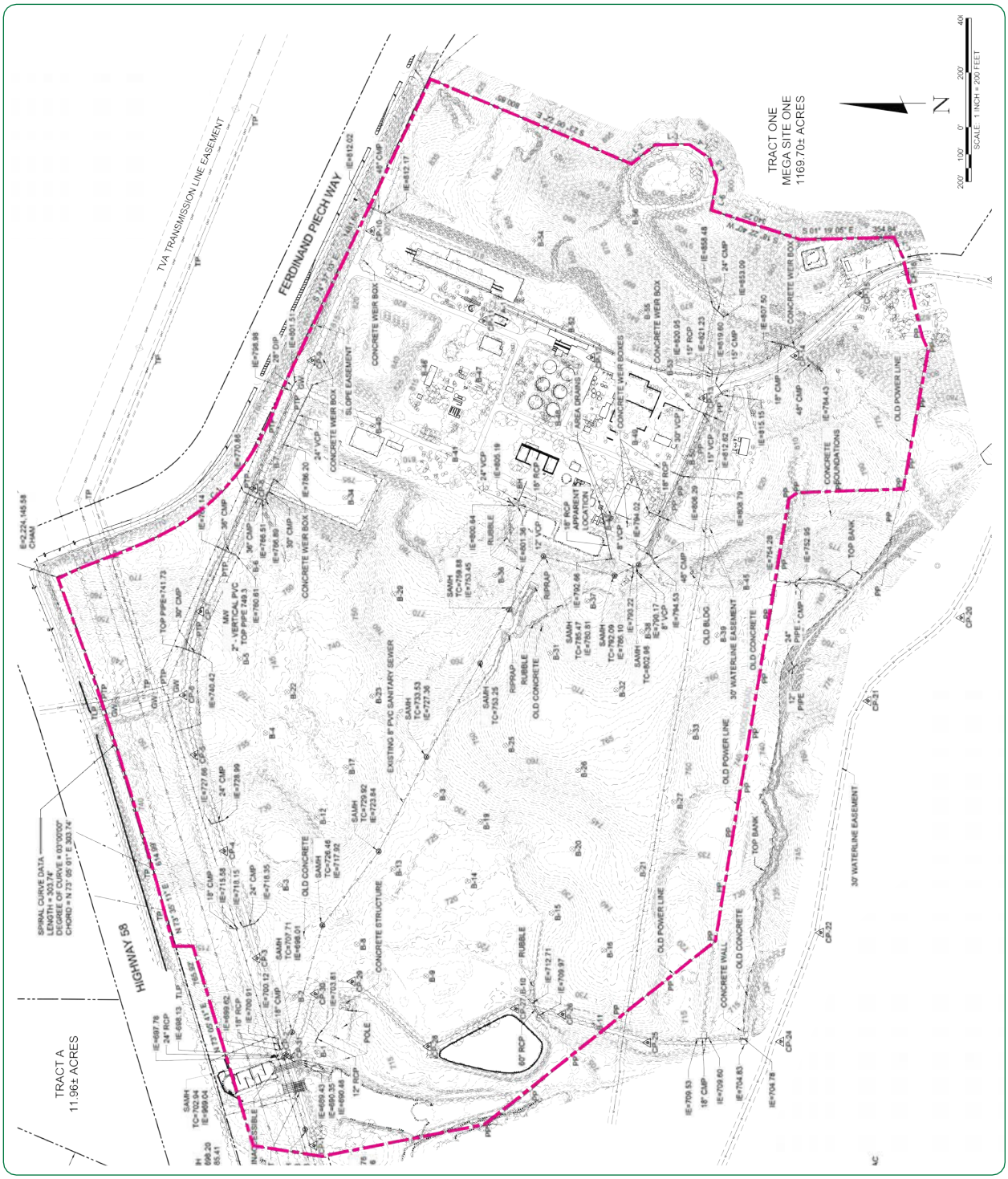

Exhibit 3. *Topographical Map*

The project will include all plant structures and required equipment necessary to receive, calcine, grind, classify, agglomerate, graphitize, and coat/blend various coke feedstocks into an electric vehicle (EV) quality synthetic graphite product for sale to battery manufacturers.

Preparation of the site for construction of the facility will require demolition of remaining VAAP structures and foundations, clearing of vegetation and arboreal growth from the parcel, and cutting and filling of parcel soil grades to a target elevation. No soils or aggregates will leave the site location, materials cut to meet elevation requirements for construction of the facility will serve as fill material for elevations to be raised to construction elevation. NAM is in the final stages of negotiations with the City of Chattanooga on an incentives package that currently includes commitments by the city to complete site prep engineering, site clearing, erosion mitigation and cut and fill. *Exhibit 4* depicts NAM's process flow while *Exhibit 5* shows a detailed schedule or the project.

A.2. b—Alternatives to Proposed Project

As the continued electrification of the domestic fleet of vehicles accelerates, the likely alternative to the construction of the NAM graphite manufacturing facility is further dependence on foreign, primarily Chinese sources of battery grade graphite material produced using sub-standard environmental and labor practices. NAM is projecting an approximate worldwide tenfold increase in demand for EV grade graphite material from 2020 to 2030, as supported by research from Benchmark Mineral Intelligence. Currently, there is no substantial domestic manufacturing source for any of this material. The development of the Enterprise South manufacturing facility will be the first major undertaking of production of EV grade graphite material in the US.

A.3—Existing Environment

A.3.a—Land Use

As discussed in A.2.a, the Enterprise South location is a brownfield location, an approximately 182-acre parcel, part of the former VAAP facility in Chattanooga, TN. The site is currently inactive and has been overtaken by vegetative and arboreal growth. Some structural remnants, primarily concrete foundations and containments from the VAAP "New Acid" facility that was constructed in the 1970's, remain. As the site is a part of the ESIP development tract, it has been extensively surveyed and sampled for future use. The VAAP-37 special remediation area, which is this project's proposed location, is located to the west of the New Acid foundations, within the parcel of land, but has been remediated as part of the preparation for reuse by the ESIP.

Appendix D "Enterprise South Overall Utilities" outlines the parcel parameter boundaries, as well as nearby utilities and services.

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[redacted]

Exhibit 4. *NAM* [redacted]

[redacted]

(b) (4)

Exhibit 5. *Detailed Schedule*

[redacted]

(b) (4)

Exhibit 5. *Detailed Schedule*

(b) (4)

[redacted]

Access to the site is by means of Ferdinand Piech Way, a public access highway, and railroad access through rail spur, currently serving other facilities and businesses in the ESIP.

Water at the site is fed by Eastside Utility District, with whom discussions are underway to feed the proposed site. Appendix R confirms availability of water at the site. *Exhibit 6* shows existing utilities at and around the proposed site.

A.3.b—Atmospheric Conditions/Air Quality

The Enterprise South parcel is located in a Humid Subtropical (Cfa) climate, at a parcel mean elevation of approximately 775 feet above sea level. Enterprise South is under the primary control of the Chattanooga/Hamilton County Air Pollution Control Bureau (CHCAPCB) and is currently in attainment status with the US EPA. The parcel air quality is typically <50 on the US AQI scale.

A.3.c—Hydrologic Conditions/Water Quality

Appendices B and C contain Army Corp of Engineers surveys and determinations for water activity on the parcel. As part of the ESIP development plan for the parcel, an extensive

Boring Location	Depth to Groundwater / Elevation at Time of Boring (feet)	Depth to Groundwater / Elevation at 24 hours (feet)	Depth to Groundwater / Elevation on 3/22/21 (feet)
B-04	Dry	10.2 / 741.8	Not Obtained
B-05	Dry	17.4 / 727.6	2.8 / 742.2
B-08	Dry	37.0 / 687.0	Not Obtained
B-09	Dry	36.0 / 681.0	
B-10	24.9 / 691.1	Not Obtained	
B-11	30.0 / 690.0	28.1 / 691.9	
B-13	46.2 / 678.8	30.1 / 694.9	
B-14	44.8 / 676.2	11.1 / 709.9	
B-15	42.4 / 679.6	41.7 /680.3	35.0 / 687.0
B-17	Dry	12.8 / 730.2	Not Obtained
B-18	8.0 / 720.0	3.2 / 724.8	
B-19	71.8 / 657.2	41.2 / 687.8	
B-20	Dry	17.2 / 719.8	
B-21	48.4 / 698.6	Not Obtained (Hole Cave-in)	
B-22	Dry	10.4 / 735.6	
B-23	Dry	4.8 / 739.2	
B-24	36.5 / 705.5	8.8 / 733.2	8.8 / 733.2
B-27	Dry	23.6 / 730.4	Not Obtained
B-28	41.5 / 704.5	1.4 / 744.6	
B-30	Dry	17.0 / 747.0	
B-33	Dry	21.4 / 727.6	
B-35	Dry	42.1 / 738.9	
B-36	Dry	35.8 / 744.2	
B-38	29 / 739.0	14.0 / 754.0	
B-39	Dry	17.4 / 748.6	
B-44	79.7 / 732.3	Not Obtained (Hole Cave-in)	
B-47	Dry	Dry	60.0 / 756.0
B-48	37.0 / 775.0	Not Obtained (Hole Cave-in)	Not Obtained
B-49	44.0 / 772.0	Not Obtained (Hole Cave-in)	
B-52	Dry	48.0 / 771.0	

Exhibit 7. *Ground Water Study*

geological report was compiled In May 2021 by S&ME, Inc. under the title "Project Hercules" for the city of Chattanooga. This report is attached to this document as Appendix E. Section 4.3 of Appendix E discusses the depth and location of groundwater borings taken on the site. *Exhibit 7* shows a summary table from the groundwater study:

As seen in *Exhibit 8*, our proposed site does not encompass any wetlands. *Exhibit 9* shows that the proposed site is not in a floodplain.

The parcel site currently contains no wastewater treatment or disposal facilities. The VAAP contained "Redwater" and "Yellowwater" effluent abatement facilities as a whole, but the remains of those treatment facilities are located several hundred feet to the south, outside the parcel slated for development.

A.3.d—Geologic/Soil Conditions

Appendix E contains an extensive Geotechnical report that satisfies all requirements of this section. The study, named Project Hercules, was commissioned by the city of Chattanooga in May 2021 and compiled by S&ME, Inc. Project Hercules covers the entire Enterprise South area and does not necessarily constitute

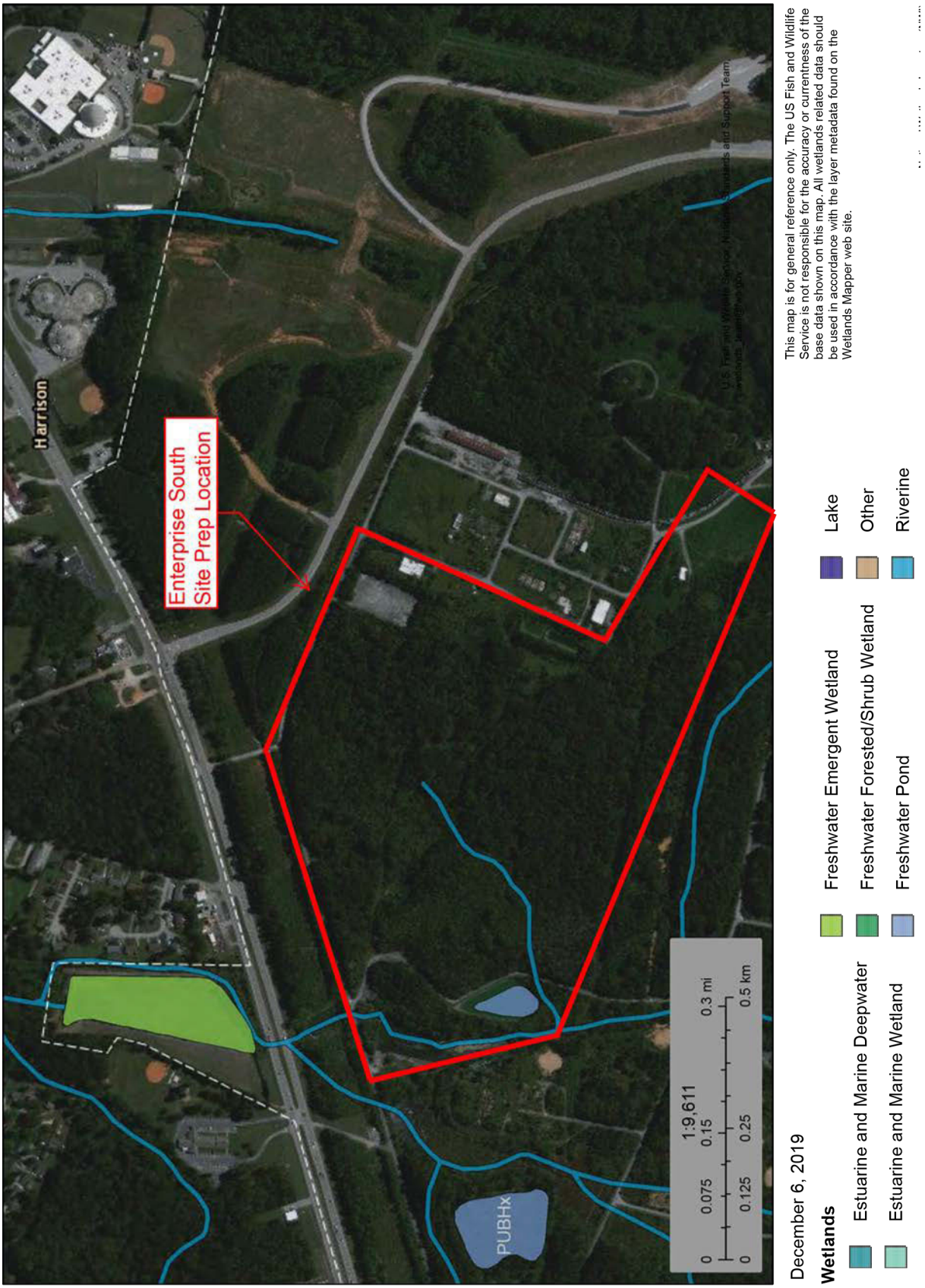

Exhibit 8. *Wetlands*

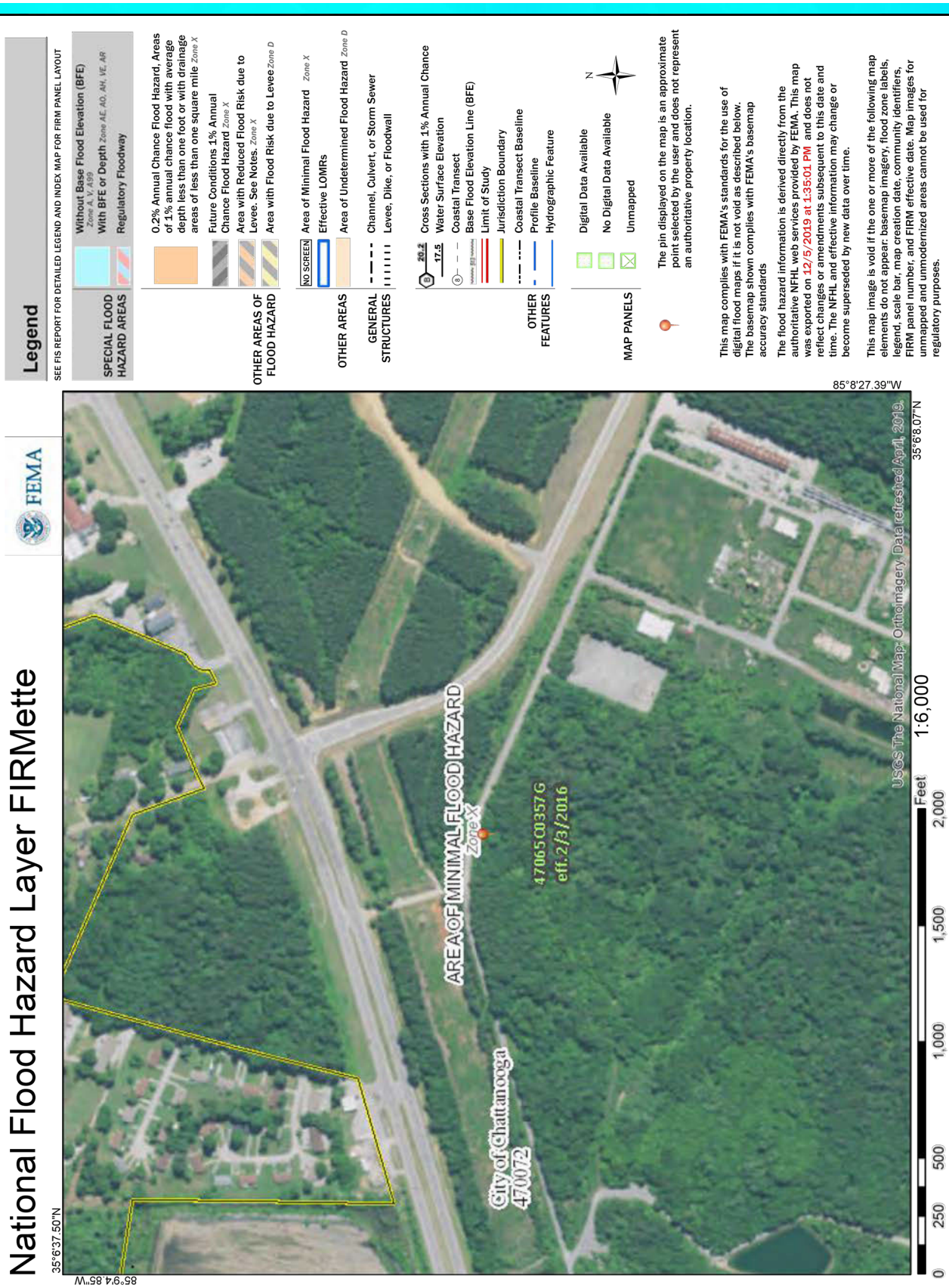

Exhibit 9. *Floodplain*

the final grade needed by the NAM project. Below are excerpts from that report:

The purpose of our work was to explore the subsurface soil conditions and groundwater level, provide feasible shallow foundation recommendations, and provide applicable earthwork recommendations. The geotechnical exploration involved a site reconnaissance, field exploration including drilling and geophysical surveying, laboratory testing, and engineering analysis.

Chattanooga, Hamilton County, TN is in the Valley and Ridge Physiographic Province. Elongated ridges that trend in a northeast-southwest direction characterize this province. The ridges are typically formed on highly resistant sandstone and shales, while the valleys and rolling hills are formed on less resistant limestone, dolomite, and shales.

Based on our review of the Geologic Map of the East Chattanooga Quadrangle, TN, dated 1989, the project site is underlain by the Cambrian-age Copper Ridge Dolomite formation. At about 1,000 feet thick, the Copper Ridge is a relatively thick formation of medium- to dark-gray, fine- to coarsely-crystalline dolomite. It is relatively well-bedded with medium to thick beds. The formation typically contains dark masses of chert in layers or thin nodules. During weathering, the Copper Ridge produces large quantities of tough, irregularly shaped, dark chert fragments and nodules and layers. The chert masses may form hills or ridges and are frequently layered. The strata of the Knox formations weather to form a thick cherty overburden typically in excess of 40 feet thick.

Carbonate rock, such as the strata underlying this site, is of great geologic age and has been subject to solution weathering over geologic time. Rainwater falling onto the surface and percolating downward through the soil and into cracks and fissures gradually dissolves the rock, producing insoluble impurities such as chert and clay. Since carbonate rock varies greatly in its resistance to weathering, the soil/bedrock contact may be extremely irregular. More soluble bedrock develops a thicker soil cover and a more irregular bedrock surface with pinnacles and slots, and less soluble bedrock usually develops a thinner soil cover and a less irregular soil-bedrock surface.

These large variations in bedrock depth are greatly enhanced by the presence of fractures, bedding planes, and faults, which provide an increased opportunity for a greater influx of percolating water. The weaknesses may form clay-filled cavities or enlarge into caves and may be connected by a network of passageways. If a cave forms close to the bedrock surface, its roof may collapse and the overlying soils may erode into the cave. Once the weight of the overlying soil exceeds the soil's arching strength, the soil collapses and an open hole or depression may appear at the ground surface. Such a feature is termed a sinkhole.

There is always some risk associated with developing any site underlain by carbonate bedrock. However, the test borings drilled at this site did not encounter open voids or other signs of incipient sinkhole conditions. Boring A-01 was drilled adjacent to a surface feature believed to be a sinkhole. The results of this boring are not conclusive that karst activity was the cause of this depression.

While we have observed successful development in the surrounding area, karst activity has been encountered on several sites in the general vicinity of this site including Volkswagen and the associated supplier park located southeast of this site and the elementary school located directly across Ferdinand Piech Way to the north of this site. We have reviewed the USGS quadrangle map for this area. The map does show a pattern of closed depressions that would indicate past sinkhole activity in near proximity to the site. Further, proposed cut depths on the order of 50 feet in some areas increases the risk of either encountering karst conditions during construc-

tion or the development of karst activity in the future.

A.3.e—Vegetation and Wildlife Resources

As seen in Appendices J through O, Large flowered Skullcap flora, as well as Indiana and Northern Long-Eared bats were potentially present, but local visual and acoustic surveys did not find any on the proposed site. Appendix O highlights the US Fish and Wildlife Survey letter of determination with regards to the above species and their habitat on the parcel. No other Federally listed endangered or threatened species were observed. As seen in *Exhibit 8*, our proposed site does not encompass any wetlands. *Exhibit 9* shows that the proposed site is not in a floodplain.

A.3.f—Socioeconomic Conditions

Exhibits 10a-c show a detailed breakout of the population, labor mix and household incomes of Hamilton County, TN, which includes the City of Chattanooga and our proposed site location. This data was taken from the 2020 Census American Community Survey:

NAM's two primary construction partners already use union labor at its site in Tennessee. NAM's two primary construction partners for the Chattanooga area, King Industries and Adman Electric hire labor as needed exclusively from the local and regional unions and have working agreements with the labor unions in Chattanooga, TN:

- Electricians—Local 175, International Brotherhood of Electrical Workers
- Plumbers and Steamfitters—Local 43, United Association Plumbers and Pipe Fitters
- Sheet Metal—Local #5, Sheet Metal Workers
- Ironworkers—Local 704, International Association of Iron Workers
- Laborers—846 HCL, Laborers' International Union of North America

On average 75 local union tradesmen and women are working at NAM each day.

NAM will leverage these existing relationships with local labor unions on the proposed Project. *Exhibit 11* and *Exhibit 12* include data on the workforce and quality of life factors in Hamilton County.

With its extensive railroads and river access, Chattanooga was at one time the "Dynamo of Dixie"—a bustling, midsized, industrial city in the heart of the South. By 1940, Chattanooga's population was centered around a vibrant downtown and it was one of the largest cities in the United States. Just 50 years later, however, it was in deep decline. Manufacturing jobs continued to leave. The city's most affluent population had fled to the suburbs and downtown was a place to be avoided, rather than the economic center of the region. The city lost almost 10 percent of its population during the 1960s, and another 10 percent between 1980 and 1990. It would have lost more residents had it not been for annexation of outlying suburban areas.

The tide began to turn in the 1990s, with strategic investments by developing public-private partnerships—dubbed the Chattanooga way. These investments spurred a dramatic turnaround. The city's population has since stabilized and begun to grow, downtown has been transformed, and it is once again poised to prosper in the new economy as it had in the old.

A.3.g—Historic/Cultural Resources

There are no historic, cultural, or archeological places in the proposed site area, as outlined in Appendix P GSA Historical Letter of Determination.

A.3.h—Visual Resources

The proposed site is situated within the ESIP, developed by the City of Chattanooga, TN. There is a public park adjacent to Enterprise South, but the project will not impact or infringe on it in any way.

Year	Demographic	Race/Ethnicity	Population Count	Percent of Population
2020	RACE	Total population	364,718	364,718
2020	RACE	One race	353,321	96.90%
2020	RACE	Two or more races	11,397	3.10%
2020	RACE	One race	353,321	96.90%
2020	RACE	White	271,254	74.40%
2020	RACE	Black or African American	68,559	18.80%
2020	RACE	American Indian and Alaska Native	530	0.10%
2020	RACE	Cherokee tribal grouping	99	0.00%
2020	RACE	Chippewa tribal grouping	0	0.00%
2020	RACE	Navajo tribal grouping	78	0.00%
2020	RACE	Sioux tribal grouping	75	0.00%
2020	RACE	Asian	7,721	2.10%
2020	RACE	Asian Indian	2,081	0.60%
2020	RACE	Chinese	926	0.30%
2020	RACE	Filipino	1,177	0.30%
2020	RACE	Japanese	325	0.10%
2020	RACE	Korean	853	0.20%
2020	RACE	Vietnamese	995	0.30%
2020	RACE	Other Asian	1,364	0.40%
2020	RACE	Native Hawaiian and Other Pacific Islander	157	0.00%
2020	RACE	Native Hawaiian	24	0.00%
2020	RACE	Chamorro	8	0.00%
2020	RACE	Samoan	114	0.00%
2020	RACE	Other Pacific Islander	11	0.00%
2020	RACE	Some other race	5,100	1.40%
2020	RACE	Two or more races	11,397	3.10%
2020	RACE	White and Black or African American	4,347	1.20%
2020	RACE	White and American Indian and Alaska Native	2,000	0.50%
2020	RACE	White and Asian	1,127	0.30%
2020	RACE	Black or African American and American Indian and Alaska Native	403	0.10%
2020	Race alone or in combination with one or more other races	Total population	364,718	364,718
2020	Race alone or in combination with one or more other races	White	281,589	77.20%
2020	Race alone or in combination with one or more other races	Black or African American	74,069	20.30%
2020	Race alone or in combination with one or more other races	American Indian and Alaska Native	3,144	0.90%
2020	Race alone or in combination with one or more other races	Asian	9,384	2.60%

Exhibit 10a. *Population Mix*

Year	Demographic	Race/Ethnicity	Population Count	Percent of Population
2020	Race alone or in combination with one or more other races	Native Hawaiian and Other Pacific Islander	567	0.20%
2020	Race alone or in combination with one or more other races	Some other race	7,950	2.20%
2020	Hispanic or Latino and Race	Total population	364,718	364,718
2020	Hispanic or Latino and Race	Hispanic or Latino (of any race)	21,081	5.80%
2020	Hispanic or Latino and Race	Mexican	9,588	2.60%
2020	Hispanic or Latino and Race	Puerto Rican	2,445	0.70%
2020	Hispanic or Latino and Race	Cuban	421	0.10%
2020	Hispanic or Latino and Race	Other Hispanic or Latino	8,627	2.40%
2020	Hispanic or Latino and Race	Not Hispanic or Latino	343,637	94.20%
2020	Hispanic or Latino and Race	White alone	258,213	70.80%
2020	Hispanic or Latino and Race	Black or African American alone	67,346	18.50%
2020	Hispanic or Latino and Race	American Indian and Alaska Native alone	476	0.10%
2020	Hispanic or Latino and Race	Asian alone	7,633	2.10%
2020	Hispanic or Latino and Race	Native Hawaiian and Other Pacific Islander alone	157	0.00%
2020	Hispanic or Latino and Race	Some other race alone	870	0.20%
2020	Hispanic or Latino and Race	Two or more races	8,942	2.50%
2020	Hispanic or Latino and Race	Two races including Some other race	824	0.20%
2020	Hispanic or Latino and Race	Two races excluding Some other race, and Three or more races	8,118	2.20%

Exhibit 10a. *Population Mix*

Year	Demograpic Type	Race/Ethnicity	Total Estimate	Labor Force Participation Rate	Employment/ Population Ratio	Unemployment Rate
2020	Race and Hispanic or Latino origin	White alone	226,024	62.30%	60.00%	3.70%
2020	Race and Hispanic or Latino origin	Black or African American alone	53,976	63.10%	57.90%	8.20%
2020	Race and Hispanic or Latino origin	American Indian and Alaska Native alone	516	46.50%	39.10%	3.30%
2020	Race and Hispanic or Latino origin	Asian alone	6,282	65.40%	63.70%	2.20%
2020	Race and Hispanic or Latino origin	Native Hawaiian and Other Pacific Islander alone	102	100.00%	63.70%	36.30%
2020	Race and Hispanic or Latino origin	Some other race alone	3,695	68.60%	66.00%	3.80%
2020	Race and Hispanic or Latino origin	Two or more races	6,961	61.30%	56.50%	6.90%
2020	Race and Hispanic or Latino origin	Hispanic or Latino origin (of any race)	13,565	68.60%	65.90%	3.80%
2020	Race and Hispanic or Latino origin	White alone, not Hispanic or Latino	217,785	62.00%	59.70%	3.70%

Exhibit 10b. *Labor Force*

Year	Race/Ethnicity	Estimate	Percent Distribution	Median Income (Dollars)
2020	Households	148,296	148,296	$56,606
2020	One race--			
2020	White	113,064	76.20%	$63,984
2020	Black or African American	28,108	19.00%	$34,704
2020	American Indian and Alaska Native	325	0.20%	-
2020	Asian	2,094	1.40%	$73,692
2020	Native Hawaiian and Other Pacific Islander	53	0.00%	-
2020	Some other race	1,235	0.80%	$46,689
2020	Two or more races	3,417	2.30%	$39,296
2020	Hispanic or Latino origin (of any race)	5,256	3.50%	$46,071
2020	White alone, not Hispanic or Latino	109,732	74.00%	$64,458

Exhibit 10c. *Household Income*

Locations	Area Wage Differential at Salary Levels					Apr-22 Workforce Estimates		
Area, County, State	$ 35K	$ 50K	$ 70K	$ 110K	$ 150K	Total Civil-ian Labor	Manufact % of Total	Unem-ployed Rate
Chattanooga, Hamilton, TN	91.2	91.0	91.6	93.8	95.2	910	7.2	25%

Exhibit 11. *Wages*

Locations	Cost of Living Differential at Salary Levels					Quality of Life Factors			
Area, County, State	$ 35K	$ 50K	$ 70K	$ 110K	$ 150K	Primary Care Ratio	Food Index	Long Commute	HS Comple-tion Ratio
Chattanooga, Hamilton, TN	96.0	95.0	94.5	94.4	94.5	910	7.2	25%	90%

Exhibit 12. *Quality of Life*

A.3.i —Health and Safety Factors

The site is currently remediated and dormant, and as such does not have any active sources of emissions, effluents, or noise.

B—Environmental Impacts of the Work To Be Performed

B.1—Land Use

During construction, there may be a locally heavy increase of truck traffic in the surrounding area to support import of supplies and materials utilized for site preparation and facility construction. After the main building construction, large process equipment will be delivered by standard tractor trailer to the site to continue construction of the process within the facility.

Upon start up and operation of the facility, raw materials will be delivered to the site in bulk by means of rail car, and finished material will be transported from the facility by means of tractor trailer and rail. [redacted]

(b) (4)

Construction waste, such as wood, metal, wire, concrete and masonry will all be sorted onsite for recycling and no other solids disposal are expected to be located onsite. In addition:

- Construction trailers with portable restrooms will be located remotely around the site. Portable restrooms will be chemically treated and pumped out—so will not create any water emissions.
- Expectation is that there will be one hard-piped job trailer with restroom connected to an onsite septic tank. The septic tank will be pumped out periodically and disposed of offsite.
- The concrete batch plant will have a water connection, tied into a local hydrant via hose connection.
- Permitted soil erosion / stormwater control barrier (silt fencing) will be used to control water runoff.
- Temporary sediment pond(s) are expected to control water and sediment runoff. This will be part of the permitted soil erosion control plan.
- Fuel trucks will be brought on-site for refueling equipment to avoid the use of fixed fuel tanks (diesel).

The process to be installed in the facility does not generate any hazardous waste and does not generate any effluent that will not be either controlled or recycled such as argon. The extent of water management for the site is expected to be limited to a stormwater management plan, primarily generated in response to building and hard surface (parking lot) runoff. All waste generated from the facility is expected to be non-hazardous and classified as Universal Waste.

B.2—Atmospheric Conditions/Air Quality

Air emissions during construction will result from the use and operations of well known construction equipment but will be remediated as much as possible as described below:

- All construction equipment fuel will be of a low-emissions variety, in particular the diesel equipment will use low sulfur-emissions fuel with diesel exhaust fluid (DEF).
- Diesel generators (when used) will use low sulfur-emissions fuel.
- On-site trees will be harvested and usable timber will be removed and sold.
- Unusable timber will be ground up for wood chips or erosion-control socks.
- The current expectation is that mass burning of wood debris will not be required for this site.
- A site concrete batch plant will be used to reduce concrete delivery and trucks. The batch plant will be equipped with dust mitigation and air emission control systems.
- Water trucks will be used for dust control.
- On-site construction trailers will use electric heat—so no air emission are expected.

Environmental impact has historically been a challenge in the production of synthetic graphite due to the use of Acheson graphitization technology and the emissions from those systems.

This project does not use the Acheson process, but rather a new, first of its kind process developed by NAM, which offers ~60% improvement in carbon emissions compared to synthetic graphite produced in China. [redacted]

(b) (4)

[redacted]

The site will qualify as a minor local emitter. We do not expect HAP, PSD, or Title V permitting/authorization to be required, based on the results of the pilot testing, and the scaled-up projections.

B.3—Hydrologic Conditions/Water Quality

NAM's process to produce artificial graphite is purposely designed to be as minimally impactful as possible to the environment. Almost all operations can be carried out indoors, with minimal input of raw materials. For the processes that must occur outside, there is no exposed material or external raw material storage in the NAM process that will generate substantial environmental impacts.

There will be no waste flows from the facility except non-hazardous universal solid waste that will be sold as a by-product or properly disposed of, and no harmful levels of exhaust gas emissions will be generated by the facility.

Groundwater/surface water impacts are expected to be confined to management of stormwater runoff from the building and hard surfaces (parking lots) of the facility.

B.4—Geologic/Soil Conditions

During soil boring and geotechnical evaluation, groundwater was encountered at a minimum depth of 8 feet below the current grade of 720 feet above sea level (ASL). Given that the site will be cut and filled to a parcel wide elevation of 775 feet ASL, effectively raising the 720-foot grade an additional 55 feet, groundwater mitigation is not expected to be a concern, as noted in section 8.3 of appendix E. Grade design considerations for erosion control are discussed in detail in section 8.5 of appendix E, a recommended slope ratio of 2.5:1 horizontal to vertical slope. In addition, the slope surface is recommended to not exceed 20' in height, and for the slope to be capped with compacted fill for erosion resistance. Given these design parameters and the fill material composition on the site, a minimum slope factor of safety ratio has been calculated to be 1.8 or better for the site, with a ratio of 1.3 or greater being typically considered as acceptable.

Appendix E, S&ME "Project Hercules" geotechnical report outlines a typical cut and excavation strategy for construction on the site. A full erosion plan will be executed as part of the detailed engineering for the site construction.

Per Appendix B determination by the US Army Corp of Engineers, there are no significant non ephemeral streams or wetlands to be

impacted on the site by either construction or from operation of the facility.

B.5—Vegetation and Wildlife Resources

As discussed in section A.3.e, and as seen in Appendices J through O, Large Flowered Skullcap flora, as well as Indiana and Northern Long-Eared bats were potentially present, but a local visual and acoustic survey did not find any on the proposed site. Appendix O highlights the US Fish and Wildlife Survey letter of determination with regards to the above species and their habitat on the parcel. No other Federally listed endangered or threatened species were observed.

B.6—Socioeconomic Conditions

[redacted]

The project is estimated to create approximately [redacted] jobs, of which [redacted] will be operators and supporting engineering staff. An additional [redacted] jobs will be dedicated to supporting production process optimization and coordination with customers to ensure

[redacted]

Further, we expect to create an additional [redacted] jobs during the construction phase of the project.

B.7—Historic/Cultural Resources

As discussed in section A.3.g and outlined in appendix P GSA Historical Letter of Determination, there are no historic, cultural, Native American, Tribal, religious, or other archeological places in the proposed site area, to be disturbed by construction or operation of the facility.

B.8—Visual Resources

As discussed in section A.3.h, the proposed site is situated within the ESIP, developed by the City of Chattanooga, TN. There is a public park adjacent to Enterprise South, but the project will not impact or infringe on it in any way.

B.9—Health and Safety Factors

During construction of the facility, typical industrial site noises will be present and associated with the site.

Once constructed, NAM is not projecting any appreciable changes to noise, odor or heat outside the facility walls during standard operation of the facility. The interior of the facility will be subject to all prescribed and applicable OSHA requirements for a safe work environment. The facility will be climate controlled for both health and safety factors, as well as process stability.

It is expected that the processes on the operating floor will generate enough noise that the operating floor will be a hearing conservation area and will require the supporting reporting and monitoring programs. A noise generation

survey will be completed at commissioning of the process to confirm this.

(b) (4)

[redacted]

[redacted]

[redacted]

[redacted]

[redacted]

(b) (4)

[redacted]

B.10—Solid and Hazardous Wastes

There will be no waste flows from the facility except non-hazardous universal solid waste that will be sold as a by-product of the process or properly disposed of in accordance with all applicable regulations. As discussed in detail in Section D below, the facility is not expected to produce any appreciable level of hazardous wastes from the facility.

All permitting activities are underway and not expected to encumber the project in any way.

B.11—Impacts on Regional/Local Plans

As discussed in previous sections, no significant negative impacts to solid waste, air quality, water quality, land use, fuel consumption, or labor are expected. The facility will have a significant positive economic impact to the Chattanooga area, bringing [redacted] full time employment opportunities. The facility will

execute all possible opportunities to reuse and recycle resources, such as recycling of furnace shielding gas through purification and recapture of the graphitization exhaust streams.

NAM is committed to sourcing power for its manufacturing from clean sources of energy generation. Our proposed location is served by the Tennessee Valley Authority, which has an electrical grid make-up which is over 50% non-carbon producing sources of energy, including Nuclear, Hydro, Wind, and Solar. NAM is focused on high-yield technologies to produce key battery materials. [redacted] Improvements in process technology demonstrated by NAM will reduce the amount of energy required to produce key battery materials.

Exhibit 13, on the following page, shows the current education breakdown of Hamilton County, taken from the 2020 Census:

Central to Chattanooga's economic revitalization has been its commitment to environmental stewardship and community engagement. Over the past two years, nearly 175 community activists, academic leaders, neighborhood organizers, health care officials and nonprofit leaders met to help define how to make Chattanooga a cleaner, greener and more equitable city.

> *"We want to create a stronger and more resilient Chattanooga for all people, and that will require all of us—government, businesses, neighborhoods, nonprofits and individuals,"*
>
> Michael Wal, Exec. Director of Green/Spaces, community development plan coordinator

Providing Workforce Opportunities in Low- And Moderate-Income Communities

NAM is highly focused on advancing traditionally underrepresented individuals in STEM careers. Its Elevate Program aims to promote women and members of underserved communities through scholarships, mentorships, and direct job opportunities at NAM. [redacted]

Year	Race/Ethnicity	Education Attainment	Total	Total Percent	Male	Male Percent	Female	Female Percent
2020	White alone	White alone	198,722	(X)	95,396	(X)	103,326	(X)
2020	White alone	High school graduate or higher	182,688	91.90%	87,158	91.40%	95,530	92.50%
2020	White alone	Bachelor's degree or higher	73,311	36.90%	35,648	37.40%	37,663	36.50%
2020	White alone, not Hispanic or Latino	White alone, not Hispanic or Latino	192,163	(X)	91,877	(X)	100,286	(X)
2020	White alone, not Hispanic or Latino	High school graduate or higher	178,500	92.90%	84,888	92.40%	93,612	93.30%
2020	White alone, not Hispanic or Latino	Bachelor's degree or higher	71,935	37.40%	34,812	37.90%	37,123	37.00%
2020	Black alone	Black alone	44,814	(X)	19,816	(X)	24,998	(X)
2020	Black alone	High school graduate or higher	38,333	85.50%	16,625	83.90%	21,708	86.80%
2020	Black alone	Bachelor's degree or higher	7,317	16.30%	2,444	12.30%	4,873	19.50%
2020	American Indian or Alaska Native alone	American Indian or Alaska Native alone	477	(X)	283	(X)	194	(X)
2020	American Indian or Alaska Native alone	High school graduate or higher	381	79.90%	214	75.60%	167	86.10%
2020	American Indian or Alaska Native alone	Bachelor's degree or higher	150	31.40%	79	27.90%	71	36.60%
2020	Asian alone	Asian alone	5,243	(X)	2,425	(X)	2,818	(X)
2020	Asian alone	High school graduate or higher	4,522	86.20%	2,170	89.50%	2,352	83.50%
2020	Asian alone	Bachelor's degree or higher	2,720	51.90%	1,351	55.70%	1,369	48.60%
2020	Native Hawaiian and Other Pacific Islander alone	Native Hawaiian and Other Pacific Islander alone	54	(X)	8	(X)	46	(X)
2020	Native Hawaiian and Other Pacific Islander alone	High school graduate or higher	54	100.00%	8	100.00%	46	100.00%
2020	Native Hawaiian and Other Pacific Islander alone	Bachelor's degree or higher	54	100.00%	8	100.00%	46	100.00%

Exhibit 13. *Education Data*

Year	Race/Ethnicity	Education Attainment	Total	Total Percent	Male	Male Percent	Female	Female Percent
2020	Some other race alone	Some other race alone	2,469	(X)	1,458	(X)	1,011	(X)
2020	Some other race alone	High school graduate or higher	1,521	61.60%	888	60.90%	633	62.60%
2020	Some other race alone	Bachelor's degree or higher	341	13.80%	215	14.70%	126	12.50%
2020	Two or more races	Two or more races	5,428	(X)	2,422	(X)	3,006	(X)
2020	Two or more races	High school graduate or higher	4,726	87.10%	2,159	89.10%	2,567	85.40%
2020	Two or more races	Bachelor's degree or higher	1,737	32.00%	1,052	43.40%	685	22.80%
2020	Hispanic or Latino Origin	Hispanic or Latino Origin	10,460	(X)	5,782	(X)	4,678	(X)
2020	Hispanic or Latino Origin	High school graduate or higher	6,758	64.60%	3,714	64.20%	3,044	65.10%
2020	Hispanic or Latino Origin	Bachelor's degree or higher	1,970	18.80%	1,220	21.10%	750	16.00%

Exhibit 13. *Education Data*

(b) (4)

Partnering with Universities and Laboratories to Spur Innovation and Drive Down Costs

. BTS has sponsored Dr. Obrovac's group since 2018 through a Natural Sciences and Engineering Research Council of Canada Alliance Grant. Under the agreement, BTS has agreed to pay Dalhousie University in quarterly installments and, in exchange, Dr. Obrovac will provide his reasonable efforts and expertise, a research team, and assignment or transfer of patents for intellectual property created as a result of the research.

(b) (4)

Providing Workforce Opportunities in Communities with Fossil Energy Job Displacements

C—Potential Liability to DOE of Existing Conditions At The Sites

NAM does not believe that any condition exists that might potentially impact the proposed project or expose DOE to previous liabilities. The proposed site was remediated by the US Army and all cleanup activities, as required under a RCRA order were performed several years ago. Barge Design, an engineering company retained by the City of Chattanooga provided NAM with the following statement:

> *"The Department of Army previously owned and operate the property but performed cleanup as required under a RCRA order. That work was documented, completed, and accepted and the property was deeded to the City and County for Industrial Development. Records of the remediation could be provided if requested. No impacts to the Project or DOE have been identified. . We have completed a selected review of VAAP Environmental Database information related to the proposed release area."*

In summary, the subject parcel contains four Environmental Areas of Concern (AOC's). Three of the sites have been closed and were recommended that No Further Action (NFA) is needed. The fourth site (yellow highlighted below) is active and subject to Dig Restrictions on contaminated soils and Land Use Controls (LUC's) via Deed restrictions to limit land use to industrial/commercial, which is the current proposed land use. A contaminated soil management plan for the active AOC may be needed as noted below during construction. Also, the groundwater is addressed by a deed/lease restriction for the entire Main Manufacturing Area. Although not specifically required, we would recommend developing a ground water management plan to address this. Note- we have provided this previously on other ESIP construction projects.

Information related to this review is summarized below from VAAP database. There are four environmental sites located in the Release Area listed in the Class 3 Modification to Consent Order, Dated 9/25/17:

» New Acid Area ***CLOSED*** (SWMU #6 VAAP-033):
- No Further Action (NFA) was recommended in the "Final RCRA Facility Investigation (RFI) Report for the New Acid Area (SWMU #6)" dated September 2004.
- EPA approved the closeout of this site on 10/12/04 after Final RFI was completed.

» Pellet Disposal Area ***CLOSED*** (AOC #12 VAAP-032):
- The pellet disposal area was remediated in 2004 under the Interim Corrective Measure (ICM) dated 2003.
- No Further Action (NFA) was recommended in the "Final RCRA Facility Assessment/Interim Corrective Measures (RFA/ICM) Report for the Redwater Ash Handling Area (AOC #11), Pellet Disposal Area (AOC #12), Redwater Ash Handling and Disposal Areas, and Miscellaneous Areas of Concern" dated September 2004.
- EPA approved the closeout of this site on 10/12/04 after Final RFA/ICM was completed.

» Suspected Redwater Ash Disposal Pit 2 ***CLOSED*** (AOC #16a):
- No Further Action (NFA) was recommended in the "Final RCRA Facility Assessment/Interim Corrective Measures (RFA/ICM) Report for the Redwater Ash Handling Area (AOC #11), Pellet Disposal Area (AOC #12), Redwater Ash Handling and Disposal Areas, and Miscellaneous Areas of Concern" dated September 2004.
- EPA approved the closeout of this site on 10/12/04 after Final RFA/ICM was completed.

» Miscellaneous Disposal Area A ***ACTIVE*** (AOC #14a VAAP-037):
- Interim Corrective Measures (ICM) consisting of excavation and off-site disposal of

impacted soil and debris was conducted from 2007 to 2008.

- Land Use Controls (LUC) and deed restrictions were recommended in the "Corrective Measures Implementation Work Plan for the Miscellaneous Disposal Area—A (AOC #14, VAAP-37)" dated 10/17/12.
- Dig Restrictions are in place for the Miscellaneous Disposal Area A due to the remaining residual contamination of the soils above unrestricted use levels. Excavation of these soils may require a Contaminated Soils Management Plan that would be coordinated with TDEC.
- Deed and/or Lease Restrictions have been recorded for the entire Main Manufacturing Area (MMA) property. These restrictions include restricted access or use of any groundwater underlying the VAAP property for any purpose and a development restriction for industrial/commercial use only.

Information from the Hamilton County Register of Deeds:

» The Quitclaim Deed for the Main Manufacturing Area (MMA) parcel (130-001) was recorded on 4/15/05. Book and Page: GI 7497 631

» Page 7 of the recorded deed restricts the property to non-residential use, prohibits groundwater use, and prohibits excavation in certain areas without approval.

» The same restrictions are outlined in the "Final Finding of Suitability for Early Transfer" (FOSET), included as Exhibit E in the recorded deed.

D—Ability to Meet Compliance Requirements at the Sites

As discussed in section A3.b, Enterprise South is under the primary control of the Chattanooga/Hamilton County Air Pollution Control Bureau (CHCAPCB) and is currently in attainment status with the US EPA. The parcel air quality is typically <50 on the US AQI scale.

All of the projected process solid waste is non-hazardous and can be disposed of through traditional universal waste measures.

Appendix Q outlines the NAM pilot facility emissions results, scaled and projected out from the pilot plant actual readings, taken in 2021, to the current NRS facility (5,000 metric tons) to future facility (30,000 metric tons) production volumes. These pilot facility results were generated under contract for NAM by All4 and submitted to NAM on September 10, 2021. Note that scaling of some pollution projections are non-linear, due to variations of process design across the three facilities, such as number of fuel burning standby generators, for example.

An outline of the projected/expected environmental impact regulations that NAM sees as applicable, based on the above process testing and projections, all of which are applicable to the Toxic Substance Control Act, the Clean Air Act, the Clean Water Act, and OSHA regulations.

40 CFR 60 Standards of Performance for New Stationary Sources

The U.S. EPA has promulgated standards of performance for new, modified, or reconstructed sources of air pollution at 40 CFR Part 60 (Standards of Performance for New Stationary Sources). 40 CFR Part 60 Subpart OOO (Standards of Performance for Nonmetallic Mineral Processing Plants) applies to certain equipment such as crushers, grinding mills and screening operations, at facilities that process nonmetallic minerals. Subpart OOO at 40 CFR §60.671 defines nonmetallic minerals as a specific list of materials. Petroleum coke is not listed as a nonmetallic mineral pursuant to §60.671 and therefore Subpart OOO is not applicable to equipment at the Facility. ALL4 concluded in their applicability memo that there are no other 40 CFR Part 60 regulations that apply or potentially apply to the Facility.

National Emission Standards for Hazardous Air Pollutants

U.S. EPA has promulgated NESHAP at 40 CFR Parts 61 and 63. NESHAP promulgated prior to the Clean Air Act Amendments (CAAA) of 1990, found at 40 CFR Part 61, apply to specific compounds emitted from specific processes. There are no 40 CFR Part 61 regulations that apply or potentially apply to the Facility because the Facility neither emits the compounds nor is one of the specific sources regulated. NESHAP promulgated under 40 CFR Part 63, commonly referred to as Maximum Achievable Control Technology (MACT) standards, apply to specific source categories that are considered area sources or major sources of Hazardous Air Pollutants (HAP). A major source of HAP is defined by the US EPA as a source with the facility-wide potential to emit (PTE) emissions limit of 10 metric tons or more for any single HAP, or with a facility-wide PTE emissions limit of 25 metric tons or more for total HAP. Area sources are those sources that do not meet the major source HAP criteria. Based on currently available information as noted above regarding pilot facility testing and projected PTE calculations, the Facility will be a minor (i.e., area) source of HAP. There are no 40 CFR Part 63 regulations that potentially apply to the Facility because the Facility is not one of the area sources regulated under 40 CFR Part 63.

New Source Review

The NSR regulations include both the Prevention of Significant Deterioration (PSD) rules and the non-attainment NSR (NNSR) rules. The PSD rules apply to all regulated NSR pollutants

except for those pollutants or precursor pollutants for which the area is not in attainment with the NAAQS for the specific pollutant. The NNSR rules apply for the non-attainment pollutants. The Facility is located in Hamilton County, which is classified as in attainment or unclassifiable for all regulated NSR pollutants. Therefore, applicability of PSD rules must be evaluated for the Facility. Chattanooga/Hamilton County incorporates the Federal PSD rules by reference in Section 4-41 Rule 18 for the CHCAPCB. Applicability of the PSD regulations to the Facility is discussed in the following section.

Prevention of Significant Deterioration

NAM projects that the Facility does not meet the definition of a major stationary source with respect to the Federal PSD rules. As presented in Appendix Q, the proposed new expansion facility does not have PTE emissions limits for the regulated NSR pollutants evaluated at a rate greater than 250 metric tons. Because there is no other potential source of emissions within the electric induction furnace process, it is assumed only the impurities within the precursor that are volatilized result in the exhaust gas emissions. Those NSR pollutants that are not known to be precursor impurities are assumed to not be emitted and are not included in Appendix Q. Therefore, NAM projects that the PSD regulations do not apply, and a further evaluation of PSD applicability is not expected or projected to be required.

Title V Operating Permit Program

40 CFR Part 70 establishes the Federal Title V Operating Program (TVOP). The TVOP major source thresholds for sources in NAAQS attainment areas are 10 metric tons for any single HAP, 25 metric tons for total HAP, and 100 metric tons for any other regulated pollutant. For the same reason described in the section above, those TVOP regulated pollutants not known to be precursor impurities are assumed to not be emitted. As presented in Appendix Q, potential emissions of each regulated pollutant evaluated are projected to be less than TVOP thresholds. Therefore, the TVOP regulations are not projected to apply to the Facility.

Stormwater and Related Regulations

For the purposes of this regulation review, potentially applicable state regulations are defined as:

- National Pollution Discharge Elimination System (NPDES) Industrial Stormwater General Permit.
- Stormwater Pollution Prevention Plan (SWPPP).
- Best Management Practices (BMP) Plan.
- Spill Prevention Control and Countermeasures (SPCC) Program.
- A discussion of each specific regulation is provided in the following subsections.

National Pollution Discharge Elimination System (NPDES)

40 CFR Part 122 of the Clean Water Act (CWA) will require the expansion facility to obtain a NPDES Industrial Stormwater General Permit under the Tennessee Multi Sector Permit (TMSP) program. This program regulates stormwater discharges for industrial sites. Under this program, the site will be required to submit a Notice of Determination to the Tennessee Department of Environment and Conservation (TDEC) Division of Water Resources. This application will identify each site's stormwater outfalls along with the impacted surface waters of state. The application will undergo a public hearing and commenting period prior to issuance. Sampling and reporting frequency will be determined by TDEC upon completion of the application process.

Stormwater Pollution Prevention Plan (SWPPP) and Best Management Practices (BMP)

The NPDES regulations require the development of a SWPPP to control site erosion and minimize stormwater pollution. The SWPPP will identify stormwater control structures such as: stormwater retention/detention

ponds, oil/water separators, swales (vegetated or dry), curbing, drop inlets or other constructed controls and will establish the sites' BMP requirements including employee training and inspection frequencies.

Spill Prevention Control and Countermeasures

40 CFR Part 112 Section 1(d)(2)(i)-(ii) of the Oil Pollution Prevention regulations require the development of a Spill Prevention Control and Countermeasures (SPCC) plan for any facility that has an aggregate above ground petroleum, plant or animal based oil storage capacity greater than 1,320 gallons or a underground storage capacity of 42,000 gallons. The purpose of the SPCC plan is to prevent the discharge of oils into the surface waters of the state and establishes training and inspection frequencies for the affected facilities. This facility is projected to require a SPCC plan based on oil capacities of planned electrical transformers to be installed above ground.

Federal Waste Regulations

40 CFR Part 261 establishes definitions under the Resource Conservation and Recovery Act (RCRA) that establish characteristic wastes that exhibit any one or more of the following characteristic properties: ignitability, corrosivity, reactivity or toxicity. These wastes could include solvents, dioxin-bearing wastes, chlorinated hydrocarbons, aerosol containers and coking. The facility is required to analyze and classify each generated waste to identify if they are subject to these definitions. NAM has identified the below federal hazardous waste classifications that could potentially apply to the expansion facility. Further detailed waste stream development and process planning is needed to confirm the projected classification within the following for the facility:

- Very Small Quantity Generator (VSQGs).
- Small Quantity Generator (SQGs).
- Emergency Planning and Community Right-to-Know Act (EPCRA).

In addition to the proper management of hazardous waste, 40 CFR Part 273 defines the proper management of Universal Waste. Examples of Universal Wastes include batteries, pesticides, mercury-containing equipment, and bulbs/lamps. A discussion of each specific Federal regulation is provided in the following subsections.

Very Small Quantity Generator (VSQGs)

40 CFR Part 262 establishes a VSQG as any facility that generates 100 kilograms or less per month of hazardous waste or one kilogram or less per month of acutely hazardous waste as defined by RCRA. A VSQG must:

- Identify all the hazardous waste generated.
- Train their employees in the proper management of the generated waste.
- Maintain a non-acute hazardous waste storage less than 1,000 kilograms.
- Dispose of the waste at a facility who is licensed and authorized to manage it.

Small Quantity Generator (SQGs)

40 CFR Part 262 establishes a SQG as any facility that generates more than 100 kilograms but less than 1,000 kilograms of non-acute hazardous waste per month or one kilogram or less per month of acute hazardous waste as defined by RCRA. Major requirements for a SQG are defined as:

- SQGs may accumulate hazardous waste on-site for 180-days without a permit.
- The quantity of hazardous on-site waste must never exceed 6,000 kilograms.
- SQGs must comply with the hazardous waste manifest requirements at 40 CFR Part 262 Subpart B and the pre-transport requirements at 40 CFR Sections 262.30 through 262.33.
- SQGs must manage hazardous waste in tanks or containers subject to the requirements found at 40 CFR Sections 262.16(b)(2) and (3).
- SQGs must comply with the preparedness and prevention requirements at 40 CFR Sec-

tions 262.16(b)(8) and (9), and the land disposal restriction requirements at 40 CFR Part 268.

There must always be at least one employee available to respond to an emergency. The designated emergency coordinator is responsible for coordinating all emergency response measures, however SQGs are not required to have detailed, written contingency plans.

Emergency Planning and Community Right-to-Know Act (EPCRA)

42 CFR Sections 311 and 313 of the Community Right-to-Know Act require facilities handling or storing any hazardous chemical to submit Safety Data Sheets (SDS) to state and local officials and local fire departments. Hazardous chemicals are defined under the Occupational Safety and Health Act and its implementing regulations. SDSs must describe the properties and health effects of these chemicals. Facilities must also submit an inventory form for these chemicals to state and local officials and local fire departments.

Chattanooga-Hamilton County Regulations

NAM has identified the following CHCAPCB regulations that potentially apply to the expansion facility.

Section 4-8(a)(1)—Installation Permit and Certificate of Operation. This rule requires a complete construction permit application with plans and specifications applicable to the work on the equipment before the construction, installation, modification, alteration or reconstruction of any fuel-burning, refuse-burning, process or construction of any air pollution control equipment. Pursuant to Section 4-8(a)(1).

Section 4-8(c)(1)—Certificate of Operation. This rule requires all fuel-burning, refuse burning, process, or air pollution control equipment for which an installation permit was required to be issued a certificate of operation before operating each source. Pursuant to Section 4-8(c)(2).

Section 4-41 - Rule 3.1 Visible Emissions Regulations. This rule applies to any air contaminant source. Pursuant to Rule 3.1, the opacity of emissions from the pilot or expansion facility shall not be in excess of 20% for an aggregate of more than five minutes in one hour, or more than 20 minutes in any 24-hour period.

Section 4-41 - Rule 4.1 Regulation of the Importation, Sale, Transportation, Use or Consumption of Certain Fuels. This rule applies to all fuel-burning equipment or otherwise consumption of fuel. Pursuant to Rule 4.1, no fuel used on-site shall contain in excess of 4% sulfur content by weight. In addition, pursuant to Rule 4.2, fuel tests will be used to determine compliance when the board deems necessary.

Section 4-41 - Rule 8.2 Fuel-Burning Equipment Regulations. This rule applies to all fuel burning equipment built or installed on or after January 1, 1973. Pursuant to Rule 8.2, particulate emissions from fuel-burning equipment shall not be in excess of the calculated emissions limit using the equation Schedule 2 in Table 1 from the CHCAPC "Emission Limitations for Fuel-Burning Equipment".

Section 4-41—Rule 10.3: Process Emissions Regulations. This rule applies to all sources of air contaminants built or installed on and after January 1, 1973. Pursuant to Rule 10.3, particulate emissions from process equipment shall not be in excess of the value in Schedule 2 in Table 2 "Particulate Matter Emission Limitations for Process Equipment" for any consecutive 60-minute period.

Section 4-41—Rule 10.7: Process Emissions Regulations. This rule applies to all process sources of air contaminants. Pursuant to Rule 10.7, particulate emissions from process equipment shall not be in excess of 0.25 grains per cubic foot of stack gases.

Section 4-41—Rule 13.1: Regulation of Sulfur Oxides. This rule applies to all sources, except

fuel-burning equipment. Pursuant to Rule 13.1, emissions of sulfur oxides from any source shall not be in excess of 500 parts per million (ppm).

Section 4-41—Rule 13.2: Regulation of Sulfur Oxides. This rule applies to fuel-burning equipment on-site. Pursuant to Rule 13.2, emissions of sulfur oxides from fuel-burning sources shall not be in excess of four pounds per million Btu of fuel consumed.

Section 4-56(c)(12)(xix)—Standard Application Form and Required Information. "Emergency Generator" is defined as a generator used when loss of primary electrical power occurs for reasons beyond the control of the source. The emergency generator can be operating for a period of five consecutive days or no more than 20 days per year. A written record of cause and duration of each loss of primary electrical power must be maintained for a period of two years.

E—Experience/Approach to Identification/Resolution of Environmental Issues

E.1—Key Project Mgmt. Personnel

NAM will rely on both internal staff and contractors to bring this project to fruition. Internal personnel and their responsibilities on the project are [redacted]

(b) (4)

EPA and Chattanooga-Hamilton County (TN) Air Pollution Control Bureau (CHCAPCB). For compliance with EPA and CHCAPCB air permits, we were required to: I) determine the volume of potential pollutants each year; II) watch for visible emissions, and fugitive particulate matter from our operations; III) perform monthly air emissions observations to determine the opacity of the emissions; IV) perform monthly audits of the equipment to determine that all components were working properly to reduce or eliminate emissions; V) wrote a quarterly report to verify all air pollution control efforts met the permit requirements; VI) toured the site twice annually with a CHCAPCB Compliance Officer to verify compliance; and VII) reported all air compliance items weekly to company management and the Health, Safety, Environmental and Transportation Manager.

City of Chattanooga Stormwater Division: Stormwater compliance items included I) touring the site during any precipitation event to determine that all drains and water pollution control methods were effective in reducing runoff to the Tennessee River; II) reporting any deficiencies to our Maintenance Dept. to help develop corrective actions for stormwater compliance; III) collecting quarterly stormwater samples from the outfalls to determine if there were any non-compliant components in the water; IV) working with a laboratory to analyze stormwater samples; V) writing an annual stormwater compliance report for the City of Chattanooga Stormwater Division to document our efforts and test results of the stormwater program; VI) training employees on the basics of the air permit; VII) reported all stormwater compliance items weekly to company management and the Health, Safety, Environmental and Transportation Manager.

Nuclear Regulatory Commission and State of Tennessee Department of Environment and Conservation (TDEC) Radiation Safety Regulations: Solid and liquid waste management and disposal efforts included I) performing monthly site audits to determine environmental issues such as storage tanks, hazardous and non-hazardous fluid storage areas, waste storage containers and storage areas, and asbestos abatement efforts; II) managing a contractor that was tasked with maintaining hazardous and non-hazardous materials storage and replenishment; III) managing a contractor that picked up hazardous and non-hazardous wastes and Universal wastes; IV) working with the housekeeping staff to manage the regular waste pickups and shredder fluff waste pickups; V) collecting quarterly samples of the shredder fluff waste to determine compliance with PCB and asbestos; VI) working with a laboratory to analyze fluff samples; VII) managed the radiation scanning program for all inbound and outbound material to verify compliance with the Nuclear Regulatory Commission and State of Tennessee Depart-

ment of Environment and Conservation (TDEC) Radiation Safety regulations. This required training to become and maintain the Radiation Safety Officer certification, monthly checks of all radiation monitors, reporting and investigating any radiation alarms, and determining the disposition of any radioactive materials; VIII) training all employees on the basics of the waste and radiation programs; IX) reporting all waste and radiation compliance items weekly to company management and the Health, Safety, Environmental, and Transportation Manager.

(b) (4)

[redacted]

Contractors

(b) (4)

[redacted]

NOVONIX Anode Materials Battery Anode Plant

Location—Confidential ***Project Size***—404,000 ft^2 ***Delivery Method***—Design/Build

Project Details. Big Blue is a 404,000 ft^2 existing building being renovated for use as a battery anode materials manufacturing facility. Renovations include heavy Mechanical & Electrical modifications, loading dock and support area modifications, Site modifications, QAQC lab creation and office modifications.

Exhibit 14. *Big Blue*

» [redacted]

(b) (4)

[redacted]

(b) (4)

[redacted]

(b) (4)

[redacted]

E.1. a—Air Quality Management

[redacted] (b) (4) [redacted]

E.1. b— Surface Water and Ground Water Management

[redacted]

E.1. c—Solid and Liquid Waste Management and Disposal Practices

[redacted]

E.1. d—Noise, Land Use, Ecological Resources, Archaeological, Cultural, and Historical Resources Management

[redacted]

E.1. e—Environmental Permit Applications, Amendments, and Renewals

[redacted]

E.2—Past Performance on Similar Projects

NAM has retained the services of Clark Construction Company and Bergmann Engineering (Architects, Engineers, Planners) to design and build our proposed facility. Some of their experience is summarized below. In particular, these firms are currently involved in the renovation and expansion of NAM's 404,000ft^2 Riverside facility and are thus intimately familiar with NAM's construction requirements and constraints. In addition, the team has experience constructing new battery pack plants as shown below in *Exhibit 14* and *Exhibit 15*

Clark Construction Company: Clark Construction Company is a full-scale commercial construction firm with a reputation for quality. Our portfolio covers projects ranging from industrial, manufacturing, science, research and medical facilities. Our team has some of the best safety procedures, systems, and programs in the industry.

Bergmann Engineering: Bergmann represents over three decades of culture built upon the work of our dedicated, client focused experts. Our design professionals' pride themselves on the highest level of integrity, dependability, ethics and quality of work. Our client list spans commercial, institutional, retail, industrial and governmental sectors throughout the United States.

E.3—Environmental Policies, Procedures, and Plans

The following lists the applicable internal NAM policies, procedures, checklists, and SOPs that comprise the NAM environmental management, all of which are added to this document by reference:

- PG-20 gas emissions plan
- PG-21 exhaust gas monitoring
- PG-29 environmental management policy
- PG-69 environmental waste report
- PG-89 hazardous waste storage & shipping policy
- PG-92 bioretention inspection & maintenance policy & form (holding ponds)
- PG-110 pesticide usage log
- PG-111 Pest sighting log
- PG-112 pest control company information
- PG-114 emergency generator usage log
- PG-129 new chemical purchase SOP
- PG-191 flood response plan
- PG-192 environmental sampling SOP
- PG-193 environmental labs & testing SOP
- PG-194 environmental permitting SOP
- PG-201 EH&S records retention policy
- PG-241 hazardous waste operations SOP
- PG-255 Environmental Cleanliness Audit Form
- PG-256 Rainwater/Stormwater management SOP
- PG-261 EH&S reporting SOP
- PG-278 Cistern inspection and maintenance checklist
- PG-279 Permeable pavement inspection & maintenance checklist
- PG-289 hazardous waste reduction plan
- PG-295 environmental incident tracking report form
- PG-300 furnace water treatment process
- PG-312 environmental lab sampling results logbook
- PG-324 universal waste program
- PG-325 Universal waste training

Equity Plan

1—Community Engagement

1.1—Approach to Community Engagement

NAM has made the Chattanooga community home since 2017, where it has already established strong community engagement connections. NAM takes its responsibility to the community very seriously and aims to uplift the local community as it expands its business footprint in Chattanooga. NAM's relationships within the community will continue to expand and strengthen as more community members become employees and partners to the company.

(b) (4)

[redacted]

1.2—Community Engagement Plan

NAM is committed to involving our community – Chattanooga and surrounding areas - in project decision making to ensure the inclusion of equity, environmental, and economic analyses into project development. We will support the planning, design, and implementation of the Project with effective tools and techniques to identify and engage with community-based organizations representing local stakeholders, including residents and businesses, labor unions and worker organizations, local government, DACs, and community-based organizations that support or work with DACs.

NAM is committed to helping achieve the Government's goal to direct 40% of the administration's climate and clean energy investments to disadvantaged communities. Our Project activities to date have focused primarily on establishing the technical and economic viability of our technology, as well as preparing site/plant requirements and conceptual design.

Our approach to community engagement includes the following elements:

Community Assessment (Before Project Initiation): Early assessment of the key issues in the community will help define the most appropriate communication tools and approaches. NAM will expand our current community engagement activities to identify a broader range of local contacts and associated issues. Early contact with the community builds trust, helps to identify acceptable alternatives, and screens out unacceptable ones. Our tools include records research, agency interviews, community interviews, and community listening campaigns.

Strategy Development (Before Project Initiation): Based on the results of the community assessment and the particular goals and needs of the Project, NAM will develop community engagement strategies and goals. These strategies establish the Community Engagement Plan for the Project and demonstrate to the community the intent to include them and the approach for soliciting and incorporating their involvement in the Project.

Information Materials (Before, During and After Project Work): Quality information materials are the key to providing clear, accurate information to the community. We will prepare information materials that are meaningful and appropriate for the audience and that communicate complex technical issues in language and images that are easily understood by the general public. We will prepare materials for general or targeted mailings, presentations at public forums, or for use through local broadcast media. Public education efforts will include facts sheets, newsletters, brochures, meeting notices, presentations, tours, etc.

Information Presentations (Before, During and After Project Work): We will develop and implement informative presentations for

public workshops and group discussions to facilitate meaningful community communication.

Documenting Community Concerns (Before and During Project Work): We will document and track any community concerns throughout the Project to promote cooperative decision making with the community. NAM documents community concerns using interview summaries, meeting summaries, and comment tracking systems.

Project Decision-making (Before and During Project Work): [redacted] As necessary, we apply these techniques to project team meetings, agency coordination meetings, community advisory committees, and workshops.

Response to the Community (Before, During and After Project Work): Accurate responses to community concerns and timely notification of Project changes and decisions increase trust and cooperation between us and the community. Maintaining continuous, open lines of communication demonstrate our commitment to listening to community concerns. NAM will prepare formal and informal written documents or host community meetings to respond to local concerns. These responses include response-to-comment documents, project updates, community briefings, and customized individual responses.

Working with Local Labor Unions: [redacted]

[redacted]

Engaging Local Businesses (Before, During and After Project Work): [redacted]

Negotiating a Community Benefits Agreement (CBA): [redacted]

In preparation for project initiation, NAM has already identified a number of local organizations and stakeholders that we will engage with. These are shown in *Exhibits 1 and 2*. Our engagement with local DACs is discussed in Section 4.

Stakeholder	Contact 1
[redacted]	[redacted]
[redacted]	[redacted]
[redacted]	[redacted]

Name Of Association/Organization	President	President: Email Address
(b) (4) [redacted]	[redacted]	[redacted]

Exhibit 2. [redacted]

2—Job Quality and Skilled Workforce

NAM's overall goal and approach to our workforce training and qualification program is to provide well-trained and qualified employees who are able to operate, maintain, or supervise activities in a safe, efficient, and environmentally sound manner and are capable of responding to onsite emergencies in a manner consistent with their jobs.

The basis of our trained and qualified workforce is that we conduct all activities in accordance with approved procedures, policies, programs, and all applicable laws. These are prerequisites for implementing NAM's safety management systems and work control processes. We apply best industry practices to these training and qualification processes, ensuring that our employees are suitably qualified and adequately trained.

[redacted]—Plan to Attract, Train, and Retain a Skilled and Well-Qualified Workforce

Quality of Jobs: NAM will create [redacted] high-quality clean-energy jobs that will draw from the local community. [redacted] The details of the proposed hourly jobs are shown in *Exhibit 3* and salaried jobs in *Exhibit 4*.

Handling Labor Disputes

[redacted]

[redacted]

Exhibit 3. *Wages for Hourly Positions*

[redacted]

Exhibit 4. *Wages for Salary Positions*

[redacted]

(b) (4)

Exhibit 4. *Wages for Salary Positions*

[redacted]

(b) (4)

Exhibit 4. *Wages for Salary Positions*

Skilled Workforce Training

As a commercial plant owner-operator, NAM applies a graded approach in the development and implementation of training requirements. That is, the level of detail and formality depends on factors such as hazard and risk, cost benefit, and productivity—the higher the consequence of improper performance or the likelihood of hazard, the more detailed and rigorous the associated training requirement. Conversely, low risk activities do not require the same degree of rigor, detailed analysis, design, implementation, or documentation, as do high-risk activities. NAM applies the use of cost-effective alternatives to traditional systematic training techniques. Line and training managers consider these factors and make appropriate training decisions that meet the requirements of the job while maintaining cost effectiveness.

[redacted]

(b) (4) [redacted]

(b) (4) [redacted]

Use of Credentialed Workforce

Exhibit 5 shows the certifications required for the credentialed workforce.

(b) (4) [redacted]

Exhibit 5. *Certifications Required for the Credentialed Workforce*

Project Labor Agreements

[redacted]

(b) (4)

[redacted]

2.2 —Ensuring the Highest Standards of Workplace Safety and Health

[redacted] These are done to further the goal of a workplace free from recognized hazards, one that has no unsafe conditions and no unsafe behaviors or actions. The company safety program strives to provide all team members with the training, knowledge, tools, work environment, and supervision to perform their work safely and efficiently.

It is the policy of NAM that accident prevention shall be considered of primary importance in all phases of operations and administration. NAM management intends to provide safe and healthy working conditions and to always establish and maintain safe practices by team members.

The prevention of accidents is an objective affecting all levels of the company and its operations. It is, therefore, a basic requirement that each supervisor makes the safety of all team members an integral part of his or her regular management function. Each team member equally must accept and follow established safety regulations and procedures.

[redacted]

(b) (4)

[redacted]—Retention/Transition and Workforce Development Opportunities

In recognition of its unique role catalyzing an end-to-end Made-In-America clean energy economy, [redacted]

Labor Union	City	State
[redacted]	Chattanooga	TN
	Chattanooga	TN
	Chattanooga	TN
	Chattanooga	TN
	Chattanooga	TN

Exhibit 6. *Local Labor Unions*

(b) (4)

[redacted]

NAM offers opportunities for career advancement and additional professional training to current employees. [redacted]

(b) (4)

[redacted]

3—Diversity/Equity/Inclusion/ Accessibility (DEIA) Plan

[redacted]—Local Minority Business Enterprises, Minority Owned Businesses, Woman Owned Businesses, and Veteran Owned Businesses

[redacted]

(b) (4)

[redacted]

[redacted]

(b) (4)

3.2 —Increase the representation of Minority Serving Institutions

NAM is highly focused on advancing traditionally underrepresented individuals in STEM careers. [redacted]

(b) (4)

[redacted]

(b) (4)

[redacted]—Collaborate with Researchers, and Staff in Minority Serving Institutions

[redacted]

(b) (4)

[redacted] Students over the age of 25 may also be eligible for program scholarships through the Tennessee Reconnect Grant.

[redacted]

[redacted]

3.4—Diversity workforce training

[redacted]

[redacted]—Quality pre-apprenticeship programs in the local community

NAM is committed to uplifting every member of the local community as its business expands in Chattanooga. [redacted]

(b) (4)

[redacted]

[redacted]

3.6—SMART Milestones

Our proposed SMART milestones are shown in *Exhibit 8.*

[redacted]

(b) (4)

Exhibit 8. *SMART Milestones*

4—Justice40 Initiative Plan

4.1—DACs to Which Project Benefits will Flow

Exhibit 9 shows the DACs that are in the immediate vicinity of our proposed plant location in Chattanooga, TN. We have begun the process of analyzing these census tracts to determine the impact that our new facility will have and how we can positively influence these communities in the various Justice40 categories, see *Exhibits 9 and 10*.

4.2—Identification of Applicable Benefits

Using the CJEST screening tool, we have identified the specific DACs that surround our proposed facility and analyzed the burdens associated with these census tracts. We are committed to addressing the following areas of improvement through our initiatives.

[redacted]

[redacted]

(b) (4)

[redacted]

Justice40 Initiative Category	Thresholds for Disadvantaged Designation	Applicable Census Tracts in Chattanooga
Climate change	▪ IF at or above the 90th percentile for expected agriculture loss rate OR expected building loss rate OR expected population loss rate ▪ AND is above the 65th percentile for low income AND 80% or more of individuals 15 or older are not enrolled in higher education	
Clean energy and energy efficiency	▪ IF at or above the 90th percentile for energy burden OR PM2.5 in the air ▪ AND is above the 65th percentile for low income ▪ AND 80% or more of individuals 15 or older are not enrolled in higher education	47065012200 47065000400
Clean transit	▪ IF at or above the 90th percentile for diesel particulate matter exposure or traffic proximity and volume ▪ AND is above the 65th percentile for low income AND 80% or more of individuals 15 or older are not enrolled in higher education	
Affordable and sustainable housing	▪ IF at or above the 90th percentile for lead paint AND median home value is at or less than the 90th percentile OR at or above the 90th percentile for the housing cost burden ▪ AND is above the 65th percentile for low income AND 80% or more of individuals 15 or older are not enrolled in higher education	47065012200 47065000400
Reduction and remediation of legacy pollution	▪ IF at or above the 90th percentile for proximity to hazardous waste facilities OR proximity to National Priorities List (NPL) sites OR proximity to Risk Management Plan (RMP) facilities ▪ AND is above the 65th percentile for low income AND 80% or more of individuals 15 or older are not enrolled in higher education	47065012300 47065012200 47065011444 47065000400
Critical clean water and wastewater infrastructure	▪ IF at or above the 90th percentile for wastewater discharge ▪ AND is above the 65th percentile for low income AND 80% or more of individuals 15 or older are not enrolled in higher education	
Health burdens	▪ IF at or above the 90th percentile for asthma OR diabetes OR heart disease OR low life expectancy ▪ AND is above the 65th percentile for low income AND 80% or more of individuals 15 or older are not enrolled in higher education	47065012300 47065012200 47065011444 47065000400
Training and workforce development	▪ IF at or above the 90th percentile for low median income as a percentage of area median income OR linguistic isolation OR unemployment OR percentage of individuals in households at or below 100% Federal poverty level ▪ AND 10% or more of adults 25 or older have not attained a high school degree AND 80% or more of individuals 15 or older are not enrolled in higher education	47065012300 47065012200 47065000400

Exhibit 9. *Disadvantaged Communities in the Chattanooga Region*

(b) (4)

[redacted]

(b) (4)

[redacted]

Census Tract by County	Climate Change				Clean energy & energy efficiency		Clean transit		Affordable sustainable housing		Reduction &remedia-tion of legacy pollution			Clean water infrastructure	Health burdens				Training & Workforce Development					
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Bradley																								
47011010300	Y	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	Y	N	N	Y	N	N	N	N
47011010700	Y	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	Y	N	N	N	N	N	N	N
47011010800	Y	N	N	N	N	N	N	N	N	N	N	N	N	Y	N	N	Y	N	N	Y	N	N	N	N
47011011402	Y	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	Y	N	N	N	N	N	N	N
Hamilton																								
47065000400	Y	N	N	Y	N	N	N	Y	N	N	Y	Y	N	Y	Y	Y	Y	Y	N	Y	N	N	N	N
47065000800	Y	N	N	N	N	N	N	N	N	N	N	Y	N	N	N	N	N	N	N	N	N	N	N	N
47065001100	Y	N	N	N	N	N	N	N	N	N	Y	Y	N	N	Y	N	Y	N	N	N	N	N	N	N
47065001200	Y	N	N	N	N	N	N	N	N	N	N	Y	N	Y	Y	Y	N	Y	N	N	N	N	N	N
47065001300	Y	N	N	N	N	N	N	Y	N	N	Y	N	N	Y	Y	N	Y	Y	N	Y	Y	N	N	N
47065001400	Y	N	N	N	N	N	N	N	Y	N	Y	Y	N	N	N	N	Y	N	N	N	N	N	N	N
47065001600	Y	N	N	Y	N	N	Y	N	N	N	Y	Y	N	Y	Y	Y	Y	Y	N	Y	Y	N	N	N
47065001900	Y	N	N	Y	N	N	N	Y	N	N	N	Y	N	Y	Y	Y	Y	Y	N	Y	Y	N	N	N
47065002300	Y	N	Y	Y	N	N	N	N	N	N	Y	Y	N	Y	Y	Y	Y	N	Y	Y	N	N	N	N
47065002400	Y	N	N	N	N	N	N	N	N	N	N	N	N	Y	Y	Y	Y	N	Y	N	Y	N	N	N
47065002500	Y	N	N	N	N	N	N	N	N	N	Y	Y	N	Y	Y	Y	Y	Y	N	Y	Y	N	N	N
47065002600	Y	N	N	N	N	N	N	N	N	N	Y	Y	N	Y	Y	N	Y	Y	Y	N	Y	N	N	N
47065002900	Y	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	Y	N	N	N	N	N	N	N
47065003000	Y	N	N	N	N	N	Y	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
47065003200	Y	N	N	N	N	N	N	N	N	N	N	Y	N	Y	Y	N	N	N	N	Y	N	N	N	N
47065003300	Y	N	N	N	N	N	N	N	N	N	N	N	N	N	Y	N	N	N	N	N	N	N	N	N
47065010700	Y	N	N	N	N	N	N	N	N	N	N	Y	N	N	N	N	Y	N	N	N	N	N	N	N
47065010800	Y	N	N	N	N	N	N	N	N	N	N	Y	N	N	N	N	N	N	N	N	N	N	N	N
47065010902	Y	N	N	N	N	N	N	N	N	N	N	N	N	N	N	Y	N	N	N	N	N	N	N	N
47065011444	Y	N	N	N	N	N	N	N	N	N	N	Y	N	N	Y	N	N	N	N	N	N	N	N	N
47065011600	Y	N	N	N	N	N	N	N	N	N	N	N	N	N	N	Y	N	N	N	N	N	N	N	N
47065012200	Y	N	N	Y	N	N	N	Y	N	N	N	Y	N	Y	Y	Y	Y	Y	N	Y	N	N	N	N
47065012300	Y	N	N	N	N	N	N	N	N	N	N	Y	N	Y	Y	N	Y	N	N	Y	N	N	N	N

Exhibit 10. *Census Tracts with Disadvantages Identified*

(b) (4)

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[redacted]

4.3 —Tracking and Measuring Benefits, How DACs will Receive Benefits

Exhibit 11 shows how the efforts described in 4.2 will be measured, and how these benefits will flow to the DACs.

Benefits to DACs	Tracking/Measuring	Benefit Flow to DACs
[redacted]	(b) (4) [redacted]	[redacted]
[redacted]	[redacted]	[redacted]

Exhibit 11. *Tracking of Benefits and How Benefits Will Flow to DACS*

(b) (4)

Exhibit 11. *Tracking of Benefits and How Benefits Will Flow to DACS*

4.4 — Potential Negative Impacts to DACs

We do not anticipate any potential negative impacts. The facility is being built on a brownfield site that had prior environmental contamination from the Volunteer Army Ammunition Plant (VAAP). The Army and the City of Chattanooga have teamed up to remediate the contamination and this cleanup has been completed.

(b) (4)

(b) (4) NAM is also focused on sourcing power for its manufacturing from clean sources of energy generation. Our proposed location served by the Tennessee Valley Authority has an electrical grid make-up which is approximately 60% non-carbon producing sources of energy, including nuclear, hydro, wind, and solar.

5—Letters of Support

NAM has initiated collaborations with local community organizations, high schools, colleges, universities, as well local and state governments. A selected set of support letters for the Project from such entities are attached in the following pages.

[redacted]

(b) (4)

The Honorable Jennifer M. Granholm
Secretary
U.S. Department of Energy
1000 Independence Ave SW
Washington, DC 20585

Dear Secretary Granholm:

[redacted]

(b) (4)

PRINTED ON RECYCLED PAPER

[redacted]

(b) (4)

June 22, 2022

U.S. Department of Energy
1000 Independence Ave SW
Washington, DC 20585

RE: Bipartisan Infrastructure Law (BIL) Battery Materials Processing and Battery Manufacturing DE-FOA-0002678
Letter of Support/ NOVONIX Anode Materials LLC
Full Application Control No. 2678-1792

To Whom It May Concern,

[redacted]

(b) (4)

[redacted]

(b) (4)

[redacted]

[redacted]

(b) (4)

June 22, 2022

U.S. Department of Energy
1000 Independence Ave SW
Washington, DC 20585

RE: Bipartisan Infrastructure Law (BIL) Battery Materials Processing and Battery Manufacturing DE-FOA-0002678
Letter of Support/ NOVONIX Anode Materials LLC
Full Application Control No. 2678-1792

To Whom It May Concern,

[redacted]

(b) (4)

Funding Opportunity Announcement (FOA)
Number: DE-FOA-0002678

FOA Area of Interest 2
Commercial-scale Domestic Production of Battery Grade Graphite from Synthetic and Natural Feedstocks

July 1, 2022

Large Scale, Energy Efficient, Domestic Production of High-Performance Synthetic Graphite Anode Material for Use in Electric Vehicles and Energy Storage Systems

Application Title Page/Cover Sheet

Proposer:
NOVONIX Anode Materials LLC

Technical and Business Point of Contact:
Dr. Chris Burns, CEO
NOVONIX Anode Materials LLC
[redacted] (b) (6) [redacted]
343 Corporate Place
Chattanooga, TN 37419-2338

Team Members
NOVONIX Anode Materials LLC (NAM)

Principal Investigators (PI) and Key Personnel (KP)
PI: Dr. Chris Burns, CEO, NAM
KP: Daniel Deas, President, NAM
KP: [redacted], Senior Project Manager, NAM
(b) (4) KP: [redacted], Construction Manager, Clark Construction
KP: [redacted], AE Lead, Bergmann Architects Engineers
KP: [redacted], Construction Project Manager, Clark Construction Company

Disclosure of Data. Pages 3, 5, 6, 14, 41, 44, 45 of the Technical Volume and pages 2, 4, 6 of the Letters of Commitment of this document may contain trade secrets, confidential, proprietary, or privileged information that is exempt from public disclosure. Such information shall be used or disclosed only for evaluation purposes or in accordance with a financial assistance or loan agreement between the submitter and the Government. The data subject to this restriction are contained in the sheets marked with the following legend: "This page contains trade secrets, confidential, proprietary, or privileged information exempt from public disclosure, and is subject to the restriction on the title page." [End of Notice]

Freedom of Information Act Exclusion. This proposal or quotation includes data that are deemed by Offeror to contain trade secrets and commercial or financial information that is privileged and confidential under Title 5, United States Code, Section 552, and which shall not be disclosed outside the Government, or duplicated, used or disclosed - in whole or in part - for any purpose other than to evaluate this application or quotation.

1—Project Overview

1.1— Background

It is estimated that over five million metric tons of graphite per year will be needed to support the annual production of electric vehicles (EV) by 2030. China currently dominates both the synthetic and natural graphite markets with 78% and 70% market share, respectively (the rest coming from Japan and Korea). China has a long history of flooding materials and commodity markets with state-subsidized products produced using sub-standard environmental and labor practices. The U.S. must enhance and actively support a nascent North American EV industry and its necessary supply chain. Unless U.S. suppliers are qualified and integrated into the OEM's supply chain now, a cycle of continued pricing pressure will create additional barriers to entry and further force reliance on foreign supply. Early-stage, high-tech, capital-intensive industries of strategic importance to the U.S. will require active U.S. government assistance. Currently there is no large-scale production of battery-grade synthetic graphite in the U.S. NOVONIX Anode Materials LLC (NAM; the Applicant), is pleased to present this Grant Application under Area of Interest 2 to build a domestic facility with the capacity to produce 30,000 metric tons of high-performance battery-grade synthetic graphite annually by Q4 2025. This is projected to be one of the largest domestic production facilities for battery-grade synthetic graphite.

By partnering with Phillips 66 to supply needle-coke feedstock from its facility in Louisiana, NAM is poised to realize a fully domestic, Made-In-America supply chain for battery-grade synthetic graphite.

History

NAM (formerly known as PUREgraphite LLC) was formed in 2017 to develop and commercialize high-performance, synthetic graphite anode material for the lithium-ion battery market focused on electric vehicles, energy storage, and specialty applications, *Exhibit 1-1*. NAM is based in Chattanooga, Tennessee and is a wholly owned subsidiary of NOVONIX Limited (the parent company). The parent company is an integrated developer and supplier of high-performance materials, equipment, and services for the global lithium-ion battery industry with operations in the U.S. and Canada and sales in more than 10 countries. Through its wholly-owned subsidiary,

Exhibit 1-1. *NOVONIX Corporate Structure*

NOVONIX Battery Technology Solutions Inc. (BTS), the parent company is a global supplier of advanced battery testing equipment and services and a center of continuous technological innovation.

Successes

NAM is a leading clean-energy, synthetic graphite producer in the U.S. It is the only company in the U.S. with key relationships from feedstock material to Tier 1 battery makers and OEMs, and is the closest to widespread commercial adoption as evidenced by the support letters for this Application.

NAM has developed innovative process technology for making synthetic graphite for lithium-ion batteries as described in the next section. In addition to operating a demonstration scale facility in Tennessee, NAM is currently outfitting its first mass production site at its new Riverside facility to reach a production capacity of 10,000 metric tons per year of synthetic graphite by the end of 2023. NAM's strong customer pipeline and strategic partnerships across supply and technology chains position it to be a North American leader in producing and selling battery-grade synthetic graphite, reducing our dependence on imported graphite.

In December 2019, NAM signed a non-binding memorandum of understanding with Samsung SDI under which the parties agreed to the purchase of NAM's anode materials. The agreement provides for the purchase of an initial 500 metric tons of NAM's synthetic graphite material, subject to the satisfaction of Samsung SDI's quality assurance processes. In January 2020 NAM signed a non-binding memorandum of understanding with SANYO Electric to evaluate the opportunity to supply anode materials for use in lithium-ion battery technology.

In January 2022, NAM announced its first major offtake agreement scaling from 3,000 to 12,000 metric tons of synthetic graphite annually with KORE Power Inc. (KORE) through which NAM will be the exclusive supplier of anode material to KORE's U.S.-based manufacturing plant. [redacted]

> *"…NAM's parent and Harper entered into an agreement to develop new equipment and process technology for higher efficiency graphitization. This work was recognized by the DOE under DE-FOA-0002322 for demonstration of the first continuous powder graphitization systems"*
>
> Paul Elwell, VP, Harper International

Current Research and Development Status

NAM's synthetic graphite delivers superior performance in lithium-ion batteries relative to those using competing natural and synthetic graphite, while also being produced through lower cost and cleaner process technology. The superior performance of our anode material is driven by material characteristics such as high purity and our proprietary process technology, which results in better electrochemical stability of our synthetic graphite materials.

[redacted]

Additionally, NAM is pursuing the development of IP through a Technology Development Agreement (TDA) with Phillips 66 Company (Phillips 66). Under this agreement NAM and Phillips 66 are innovating together to develop

new technology to produce different grades of input materials that may be of lower carbon intensity or lower cost that may be used to produce high-performance battery grade synthetic graphite.

NAM's parent company, NOVONIX Limited, has an agreement with U.S.-based Harper International (Harper) pursuant to which [redacted]

(b) (4)

[redacted]

In addition to the increased efficiency of NAM's graphitization technology, NAM has developed leading process technologies to control material characteristics such as particle morphology and surface chemistry, which are critical to the performance advantages of NAM's material over current market participants. NAM has currently commercialized its GX-23 product through customer engagements and is continuing to develop new materials for different customers and applications. [redacted] Based on internal testing, GX-23 significantly outperforms all other competitive, commercially available anode materials in terms of cycle life (the number of times a battery can be fully charged and discharged). Longer cycle life will continue to be an increasingly important characteristic of batteries going forward for EVs, especially with the increase in Vehicle-to-grid (V2G) technology and ESS applications. Batteries utilizing GX-23 will play a major role in reducing the total cost of ownership, as they have the potential to outlast the EV or ESS systems applications they are deployed in, reducing the need to replace the battery, one of the most expensive components in the lifespan of a battery product.

1.2—Project Goal

Targeted Improvements to the Baseline Technology

NAM is proposing to build, own, and operate a new ~[redacted] U.S.-based facility (*Exhibit 1-2*) to expand its production capacity of high-quality battery-grade synthetic graphite, which will be used to support the electrification of the domestic transportation fleet and growth in grid-scale ESS. The introduction of this expanded capacity in the North American supply of domestic battery materials, which is currently far below demand and is expected be so through the decade, will help reduce cost and supply barriers for the industry as a whole. The facility will initially scale up to 30,000 metric tons per year of production capacity targeted for EV applications as early as Q4 2025, reducing the U.S.'s reliance on imported synthetic graphite, which is currently almost exclusively sourced from China. The facility allows for expansion to 75,000 metric tons per year which NAM plans to pursue after successful completion of the Project.

Critical Success Factors

Phillips 66 currently produces battery coke feedstock suitable for the battery industry from its Lake Charles, LA facility. In 2021, Phillips 66 invested $150M into NAM's parent company. [redacted]

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[redacted]

[redacted]

(b) (4)

The facility will utilize NAM's innovative process technology to establish the first large scale domestic production of battery-grade synthetic graphite with better performance than currently available anode materials on the market. NAM's production process is more cost-effective and environmentally friendly than current off-shore production methods and, as a domestic producer, offers battery makers a major supply chain advantage.

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[redacted]

1.3—DOE Impact

How DOE Funding is Necessary to Achieve the Project objectives

To establish meaningful domestic production capacity of graphite material, for the lithium-ion battery industry, requires significant capital investment. The Project outlines the investment of $1B which will finance a facility with an initial annual capacity of 30,000 metric tons. However, this level of production represents only a small fraction of the domestic demand for synthetic graphite which is currently being supplied primarily by China. The role of government funding is critical as a catalyst to secure full Project financing through other sources. Thus far, NAM has grown almost entirely as a result of shareholder investment based on the assumption that the U.S. government will ensure a competitive and fair market. However, the scale and pace at which a domestic U.S. graphite market needs to grow necessitates the support of DOE funding. All the major auto manufacturers have announced electric vehicle production targets to be met as soon as the next three years. These targets cannot be achieved without battery materials and, specifically, synthetic

graphite anode materials. Support through this DOE grant will allow construction to begin on the facility to meet the production targets required to support our commercial customers.

Through NAM's relationship with Phillips 66, the Project will see domestic precursors from Phillips 66 used in validation of all production equipment with the goal of using domestic materials for subsequent regular production.

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As of the date of our application for funding, NAM has received, and expects to continue to receive, support from state and local authorities in several forms: fast-track jobs program grants; tax abatement and exemption support; and power credits to be used over the next five years from Tennessee Valley Authority for its current investment in expanding to 10,000 metric tons per year in its Riverside facility.

1.4—Equity Plan

Community Engagement: NAM is committed to involving our community—Chattanooga and surrounding areas—in project decision making to ensure the inclusion of equity, environmental, and economic analyses while planning and executing the Project. We will support the planning, design, and implementation of the Project with effective tools and techniques to identify and engage with community-based organizations representing local stakeholders, including residents and businesses, labor unions and worker organizations, local government, Disadvantaged Communities (DACs) and community-based organizations that support or work with DACs.

NAM is committed to helping achieve the Government's goal to direct 40% of the administration's climate and clean-energy investments to disadvantaged communities. Our approach to community engagement is detailed in the Equity Plan.

Job Quality and Skilled Workforce: We estimate that the Project will lead to the creation of high-quality, clean-energy jobs and indirect jobs during construction. Our hiring strategy will include a focus on local labor and workers displaced from the fossil fuel and manufacturing industries. Once in operation,

(b) (4)

The majority of the jobs created will be highly skilled, with pathways for the local workforce to acquire those skills through on-the-job-training.

Diversity/Equity/Inclusion/Accessibility:

(b) (4)

Justice 40 Initiative

Using the CJEST screening tool, we have identified the specific DACs that surround our proposed facility and analyzed the burdens associated with these census tracts. We are committed to addressing the following areas of improvement through our initiatives.

Improving Income: By creating high quality clean-energy jobs that will draw from the local community. Hamilton County (average salary $27,464/year) will benefit from

Providing Educational Opportunities and Tuition Assistance:

Providing Workforce Training: NAM offers opportunities for career advancement and additional professional training to current employees.

Improving Clean-Energy Jobs: In recognition of our unique role catalyzing an end-to-end Made-In-America clean-energy economy,

(b) (4)

Providing Health Incentives and Education: We are working with our health insurance provider to create a plan to provide

Mitigating Legacy Site Pollution: NAM's facility will be built on a Brownfield site. As negotiated between the U.S. Army (the original owner of the property) and the City of Chattanooga, the needed environmental cleanup of the site was performed by the U.S. Army to reduce the burden of legacy pollution on the local residents prior to the construction of our facility.

Increasing Access to Low-cost Capital: We will develop and implement a plan that

Increasing Clean Energy Enterprise Creation and Contracting: NAM's clean-energy focused facility will result in the creation of clean energy enterprises and contracting opportunities.

2—Technical Description, Innovation, and Impact

2.1—Relevance and Outcomes

Detailed Description of the Technology, Including Scientific Principles and Objectives

NAM was formed in 2017 to develop and commercialize high performance synthetic graphite anode material for the lithium-ion battery market focused on electric vehicles, energy storage, and specialty applications. These end-markets demand high performance batteries with longer life cycles, while at the same time requiring lower costs to continue to drive mass adoption. Anode materials are one of the most significant components that define the overall performance, reliability, and cycle life (the number of times a battery can be fully charged and discharged) of the battery cell.

NAM has developed one of the most advanced, environmentally friendly, and cost-effective anode materials in the market for EV and energy storage applications. NAM is a leading U.S.-based producer of battery-grade synthetic graphite with plans to bring large-scale production of the material to the U.S. Through NAM's developed technology and partnerships, it is well positioned to support the rapid growth in demand for these advanced anode materials in North America. Partnered with Phillips 66 to supply needle-coke feedstock from its facility in Louisiana, NAM is poised to realize a fully domestic, Made-In-America supply chain for synthetic graphite.

Based on internal testing, NAM's synthetic graphite is competitive or superior to refined natural and synthetic graphite anode materials (currently almost exclusively sourced from China) in key metrics such as first cycle efficiency and cycle life, while maintaining competitive production cost (as measured by US$/metric ton or US$/kWh).

In 2020, NAM's parent company entered a strategic alliance with Harper, a Buffalo, NY-based company, to develop specialized induction furnace technology intended to enhance the company's synthetic graphite manufacturing process. These induction furnace systems have significant advantages in thermal processing, improving energy efficiency, and product quality relative to current technologies, such as Acheson graphitization furnaces, used in synthetic graphite production. [redacted] This furnace technology has the potential to significantly improve the energy efficiency of graphitization and lower the carbon intensity and production cost.

NAM's innovative graphitization technology combines the benefits of higher Coulombic Efficiency, longer cycle life batteries, high production yield, smaller carbon footprint, and a wholly domestic supply chain.

NAM engaged Minviro Ltd. to conduct a cradle-to-gate Life Cycle Assessment (LCA) on the production of GX-23 grade synthetic graphite at NAM's Riverside facility in Tennessee. Minviro has concluded that the use of NAM's anode materials in EVs can reduce greenhouse gas emissions by ~60% (measured as kg CO_2 eq. per kg of graphite) compared to Chinese produced synthetic graphite. The increased cycle life achieved with NAM's synthetic graphite has the potential also to significantly reduce the consumption of other battery materials (lithium, nickel, manganese, etc.) and therefore has an outsized impact on the entire battery supply chain.

NAM's synthetic graphite can deliver superior performance in lithium-ion batteries relative to those using competing natural and synthetic graphite, while also being produced at a lower cost and using cleaner process technology. NAM's proprietary anode materials consistently outperform commonly used industry

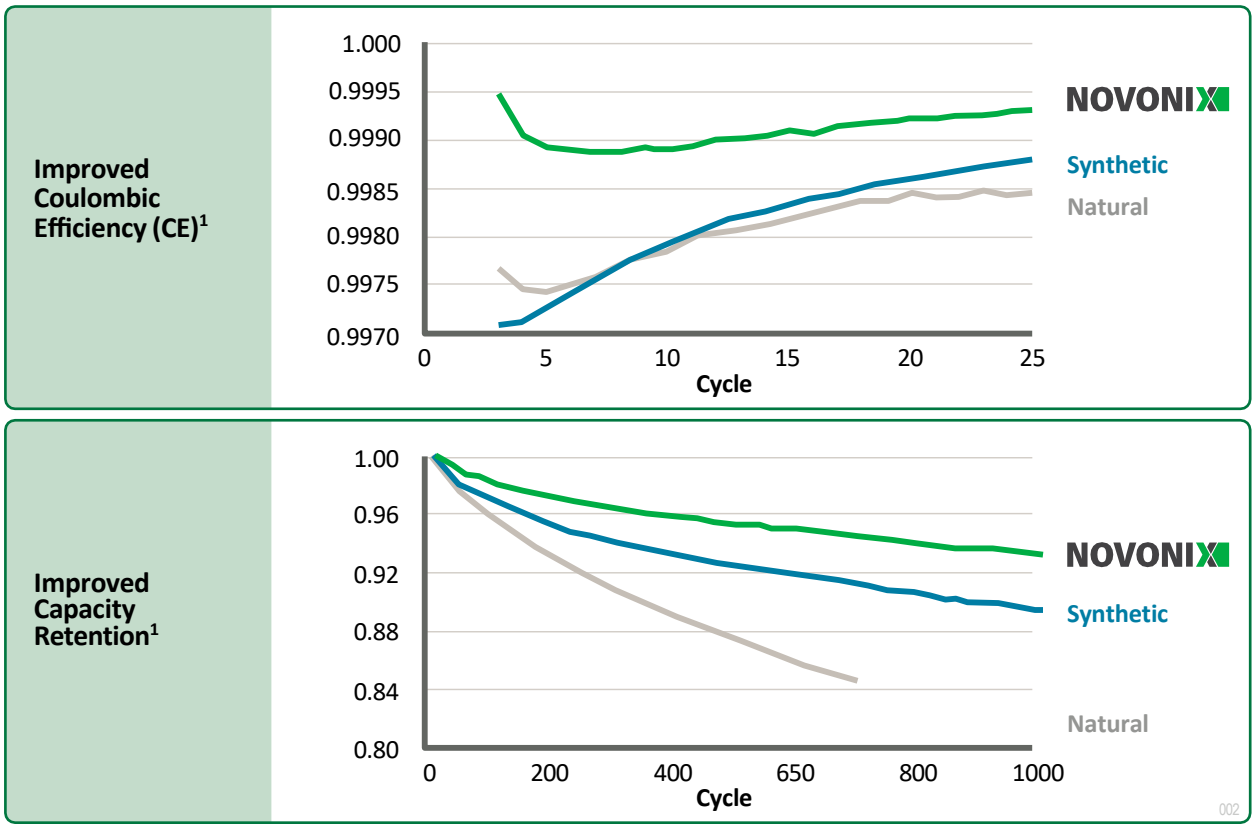
materials in head-to-head internal testing for Coulombic Efficiency, which is how efficiently lithium atoms are stored during charge and released during discharge. Increased Coulombic Efficiency results in a longer cycle life. In EV applications, this efficiency translates into better range retention over time, as seen in *Exhibit 2-1*. The superior performance of NAM's anode material is driven by material characteristics and NAM's proprietary process technology resulting in better electrochemical stability of its synthetic graphite materials.

Relevance to FOA goals

It is estimated that over five million metric tons of graphite per year will be needed to support the annual production of EVs by 2030. China currently dominates both the synthetic and natural graphite markets with 78% and 70% market share, respectively (the rest coming from Japan and Korea). Our proposed facility will be the first large-scale domestic producer of battery grade graphite, thus actively supporting the nascent North American EV industry. As such our proposal meets one of the primary goals of the FOA—*reducing the dependence on imported components needed for EV battery production*.

Improvements in process technology demonstrated by NAM will reduce the amount of energy and raw materials required to produce key battery materials. NAM is focused on high-yield technologies to produce key battery materials. [redacted] NAM uses no chemical

(b) (4)



1. *Data based on internal measurements taken as part of verification process.*

Exhibit 2-1. *NAM's Anode Material Outperforms Other Graphite in Head-to-Head Testing*

(b) (4)

purification so there are no risks of harmful chemical leaks, spills, or exposure, and no requirements for disposal of harmful chemicals.

Rechargeable battery technology is a national security concern recognized by both the Department of Defense and the Biden Administration. Ensuring that the U.S. secures and significantly increases its industrial base for the domestic processing and manufacturing of rechargeable batteries will be critical to fostering U.S. energy independence. *Domestic rechargeable battery production also supports the Biden Administration's decarbonization goals, creating good-paying, clean-energy jobs, and developing a highly skilled workforce.* In addition we will help meet the following goals of the Bilateral Infrastructure Bill (BIL) and DOE.

Reducing Greenhouse Gas Emissions and Using Energy Efficient Manufacturing and Supply Logistics: As a result of

The global warming potential of producing anode grade synthetic graphite at the NAM plant was compared with producing anode grade synthetic graphite in Inner Mongolia, and natural graphite in Heilongjiang Province, China. *Exhibit 2-3* shows NAM's significantly lower carbon footprint.

NAM is also focused on sourcing power for its manufacturing from clean sources of energy generation. Our proposed location, served by the Tennessee Valley Authority, has an elec-

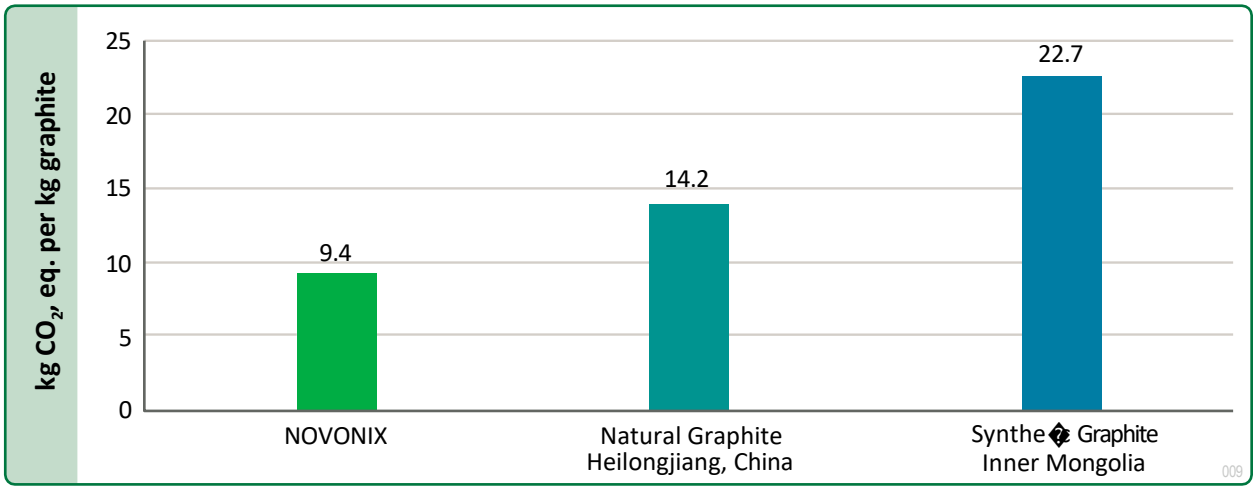


Exhibit 2-3. *NAM has a Significantly Smaller Carbon Footprint than other Manufacturing Methods*

trical grid make-up which is approximately 60% non-carbon producing sources of energy, including nuclear, hydro, wind, and solar.

"NAM has established sound workforce development programming in Chattanooga through partnerships with local nonprofits, high schools, community colleges, four-year and advanced degree programs in Hamilton County. The state has supported NAM's growth in Tennessee, and I expect that this partnership will continue as NAM expands these programs upon DOE's support for the Project"

Providing Workforce Opportunities in Communities with

(b) (4)

Providing Workforce Opportunities in Low and Moderate-Income Communities: NAM is highly focused on advancing traditionally underrepresented individuals in STEM careers.

(b) (4)

(b) (4)

"We are especially pleased by *into STEM career paths and job opportunities at NAM"*

Partnering with Universities and Laboratories to Spur Innovation and Drive Down Costs: In February 2021, NAM's sister company, BTS, announced a five-year extension of the sponsorship of Dr. Mark Obrovac's laboratory at Dalhousie University through the execution of a collaborative research agreement. BTS has sponsored Dr. Obrovac's group since 2018 through a Natural Sciences and Engineering Research Council of Canada Alliance Grant. Under the agreement, BTS supports Dalhousie

University in exchange for which Dr. Obrovac will provide his expertise, a research team, and assignment or transfer of patents for intellectual property created as a result of the research. [redacted]

(b) (4)

Partnering With Tribal Communities: [redacted] NAM is in discussions with the [redacted] to assist the organization in its mission to expand job opportunities and promote better employment to its members through hosting information sessions, job training programs, and career fairs.

> *"NAM has donated funds to the [redacted], a place that will provide a safe haven of hope for the Native American community, as well as emergency relief, job training, and education. NAM will prioritize hiring members of the Native American community with the assistance of [redacted]*

[redacted]

(b) (4)

[redacted]

(b) (4)

[redacted]

Potential to Meet Other Performance Targets: In combination with the provisions of the United States-Mexico-Canada Agreement, increased domestic battery supply will allow and enable automotive OEMs to more readily advance their EV-related business objectives. A fully domestic supply chain will also result in faster deliveries.

Expected Outcomes of the Project

The Project will scale up to 30,000 metric tons per year of production capacity targeted for EV applications as early as Q4 2025, significantly reducing the U.S.'s reliance on imported synthetic graphite, which is currently almost exclusively sourced from China. The Project's planned output of 30,000 metric tons of synthetic graphite would support roughly 30 GWh of cell manufacturing and would supply 500,000 EV battery packs per year (assuming 60 kWh average battery pack size).

The Project is estimated to create approximately [redacted] jobs, of which [redacted] will be operators and supporting engineering staff. An additional [redacted] jobs will be dedicated to supporting production process optimization and coordination with customers to ensure that the product is produced to specifications. The production process for synthetic graphite material has multiple unique steps, which will have a large operator labor requirement to run major equipment, as well as a significant engineering presence to support operators. In addition, we expect to create an additional [redacted] jobs during the construction phase of the Project.

2.2— Feasibility

Demonstration of the Technical Feasibility of the Proposed Technology and Capability of Achieving the Anticipated Performance Targets

NAM and its parent company own a significant IP portfolio for the process technology for making synthetic graphite, all held as trade secrets. [redacted] (b) (4) [redacted]. This intellectual property includes innovative high-performance synthetic graphite anode materials (demonstrated in internal testing to outperform leading materials currently in the market) and production methods that significantly lower production costs.

Since inception, NAM has established full analytical laboratory capabilities to test material characteristics including x-ray diffraction, scanning electron microscopy imaging, tap density measurements, purity analysis, Brunauer-Emmett-Teller (BET) surface area analysis, tap density and particle size distribution. NAM's sister company BTS provides support to NAM for a range of electrochemical testing with cell manufacturing pilot line capabilities and thousands of test channels to evaluate cell formats including coin cells, 18650s, 21700s, and pouch cells ranging in size from 200mAh—5Ah. Specific capacity (mAh/g), first cycle efficiency, fast charge capability and cycle life performance are measured for materials produced at NAM. These internal capabilities are critical to evaluating materials for potential customers (*Exhibit 2-4*). NAM continues to work with other partners to cross validate measurements and widen the scope of capabilities to those that NAM does not have in its own analytical labs.

IP is being developed, outside the scope of this Project, as part of a Technology Development Agreement (TDA) with Phillips 66. Under this agreement NAM and Phillips 66 will work together to develop new technology to produce different grades of input materials that are lower carbon intensity or lower cost to be used to produce high-performance battery grade synthetic graphite. This partnership is another example of our support for the growing decarbonization sector, and continue to advance NAM's IP portfolio.

NAM also has an exclusive agreement with Harper pursuant to which [redacted] (b) (4) [redacted]

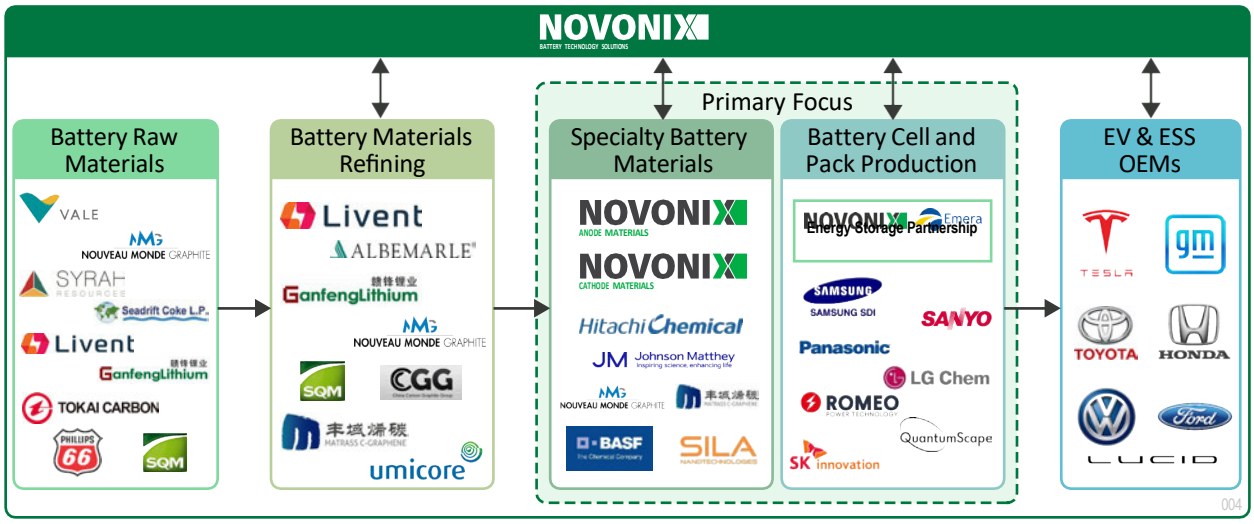


Exhibit 2-4. *NAM's Sister Company BTS Provides Support to NAM and a Wide Array of Customers in the Battery Value Chain for Electrochemical Testing with Cell Manufacturing Pilot Lines*

[redacted]

(b) (4)

[redacted]

Phillips 66 Partnership: As part of the Technology Development Agreement, Phillips 66 and NAM have been collaborating on the analysis of raw materials, intermediate products, and final battery-grade synthetic graphite products. As such the two companies have developed consistent methodologies to leverage analytical equipment, both physical and electrochemical, between both companies' laboratories. Phillips 66 works with NAM to support additional analytical activities to validate products made by NAM during commissioning and operation including physical measurements such as scanning electron microscopy imaging, BET surface area analysis, tap density, particle size distribution, and x-ray diffraction. Phillips 66 also supports electrochemical validation to measure first cycle efficiency and specific capacity (mAh/g) which will serve as the basis of data before selected materials continue to multi-amp hour cell builds and testing in other laboratories. The technical teams within NAM and Phillips 66 meet regularly to share test plans, methodologies, and data.

NAM has partnered with both Oak Ridge National Lab and Argonne National Lab to support analytical evaluation of material through commissioning and early production. This includes both physical propeties testing of the materials to compare to measurements made at both NAM and Philips 66. The national labs' analytical resources are extensive and extend beyond NAM's internal capabilities including specialized equipment such as shape analysis and x-ray photo-electron spectroscopy. Both labs have provided proposals and support letters outlining two years of analytical and electrochemical validation of materials produced under the Project in >2Ah full cells. [redacted]

(b) (4)

[redacted]

Description of Previous Work Done and Prior Results

In addition to the increased efficiency of its graphitization technology, [redacted] hich are critical to the performance advantages of NAM's material over current market participants. NAM has currently commercialized its GX-23 anode material through customer engagements and is continuing to develop new materials for different customers and applications. Based on internal testing, GX-23 significantly outperforms all other competitive, commercially available anode materials for cycle life. Longer cycle life will continue to be an increasingly important characteristic of batteries going forward for EV, especially with the increase in V2G technology and ESS applications. It will also play a major role in reducing the total cost of ownership of batteries, as batteries utilizing GX-23 have the potential to outlast the EV or ESS systems applications they are deployed in, reducing the need to replace the battery, which is one of the most expensive components within the lifespan of a battery-powered product.

In December 2019, NAM signed a non-binding memorandum of understanding with Samsung SDI for the purchase of NAM's anode materials. The agreement provides for an initial 500 metric tons of NAM's synthetic graphite material, subject to the satisfaction of Samsung

SDI's quality assurance processes. In January 2020, NAM signed a non-binding memorandum of understanding with SANYO Electric to supply anode materials for use in lithium-ion battery technology.

On July 28, 2021, NAM completed the purchase of an ~404,000 ft^2 facility in Chattanooga, Tennessee (Riverside) and is currently expanding the annual production capacity of this facility to 10,000 metric tons. With existing cash and cash equivalents, NAM will have the funds to expand production capacity to an expected 10,000 metric tons per year by 2023.

In January 2022, NAM announced an offtake agreement with KORE through which NAM will be the exclusive supplier of anode material to KORE's US-based manufacturing plant. This is NAM's first major offtake agreement; it is a 5-year agreement that will start with a 3,000 metric tons per year delivery rate at the beginning of 2024 and scale up to 12,000 metric tons per year as the plant expands to its production target of 12 GWh per year in 2027. This further supports NAM's commercialization efforts and indicates the strength of the market demand for synthetic graphite.

How the Project Will Secure and/or Retain Trained and Qualified Workers to Meet the Performance Targets

[redacted]

(b) (4)

[redacted]

NAM is proud to [redacted]

[redacted]

(b) (4)

[redacted]

[redacted] tudents over the age of 25 may also be eligible for program scholarships through the Tennessee Reconnect Grant. [redacted]

NAM offers opportunities for career advancement and additional professional training to current employees, including [redacted]

[redacted]

(b) (4)

[redacted]

NAM is also actively pursuing a partnership with [redacted]

2.3—Innovation and Impacts

Current State-of-the-Art in Lithium-ion Battery Technology

Lithium-ion batteries have emerged as the leading technology for rechargeable batteries because of their high energy and power density, lower maintenance, longer cycle life, and lower risks from volatile chemicals. A lithium-ion battery cell is composed primarily of three main components: positively charged cathode, negatively charged anode, and the electrolyte. The cathode releases ions while it is charging and then absorbs them while discharging; conversely, the anode absorbs ions during charging and releases them while discharging. The electrolyte acts as a medium for the transportation of lithium-ions between anode and cathode while corresponding electrons travel through the external circuit, thus driving the charging cycle.

In most commercial lithium-ion battery chemistries, over 90% of the anode is composed of graphite. Graphite suitable for battery use can either be produced from naturally mined flake graphite or synthetically from other carbon rich precursors, such as oil refining by-products. Alternatives to graphite used to make anodes include silicon, lithium metal (in liquid electrolyte or solid state cells), and lithium titanate.

While silicon and lithium metal batteries are expected to marginally increase their market share over time, Benchmark Minerals Intelligence (Benchmark), a leading consulting firm focused on the electric vehicle and energy storage supply chain, expects graphite to remain the dominant anode material and to account for 90% of anode demand by 2030 due to its reliability, safety, cost advantage, and well-known properties (see *Exhibit 2-5*).

Innovation of the Proposed Technology

NAM's synthetic graphite delivers superior performance in lithium-ion batteries relative to those using competing natural and synthetic graphite, while also being produced through cleaner and lower cost process technology. The superior performance of our anode material is driven by its high purity and our proprietary process technology, which results in better electrochemical stability of our synthetic graphite materials.

[redacted]

(b) (4)

[redacted]

(b) (4)

[redacted]

NAM's synthetic graphite is produced to very high purity standards relative to graphite anode materials currently in the market to improve performance and safety. NAM uses an energy efficient process with no hazardous chemicals, unlike traditional graphite production processes. Traditional synthetic graphite processes predominantly use lower efficiency Acheson graphitization furnaces that, in China, are typically powered by high carbon emission sources of energy. Natural graphite processing relies on strong acids for chemical purification creating toxic waste. Additionally, traditional graphitization furnaces also do not heat material uniformly, so there is significant waste in manufacturing. NAM's proprietary manufacturing process is more environmentally friendly, energy-efficient, and cost-effective than predominant industry practices—driving high-quality anode processing powered by clean-energy and with a ~60% reduction in carbon intensity relative to Chineese synthetic graphite.

Our proprietary anode materials consistently outperform commonly used industry materials in head-to-head internal testing in key metrics such as first cycle efficiency and cycle life, while maintaining competitive production cost (as measured by US$/metric ton or US$/kWh).

Synthetic graphite, specifically NAM's anode material, is better suited for battery anode

[redacted]

(b) (4)

Exhibit 2-6. *NAM Production Process Flow*

production than natural graphite, due to its higher Coulombic Efficiency (shown previously in *Exhibit 2-1*) and improved capacity retention, leading to longer battery life and reduced loss of range over time.

Advantages of the Proposed Technology over Current and Emerging Technologies

The Project will utilize NAM's innovative process technology to produce battery-grade synthetic graphite that has better performance than currently-available anode material on the market. NAM's production process is cost competitive and more environmentally friendly than current production methods and NAM offers battery makers a major supply chain advantage. A Life Cycle Assessment (LCA) was performed on NAM's manufacturing process through Minviro. This LCA showed NAM's synthetic graphite has less than half the carbon intensity as Chinese synthetic graphites.

Additionally, NAM's synthetic graphite product and process of production has significant advantages over competitors. NAM's increasing emphasis on environmentally conscious battery technologies distinguishes it from its competitors and is critical to a sustainable future with the expected widespread adoption of electric vehicles and grid energy storage systems. Many current manufacturing methods for key battery materials are energy-intensive, wasteful, or otherwise hazardous to the environment, and end users and OEMs increasingly prefer to source materials from cleaner technologies. NAM is focused on the development of technologies that support key environmental, social, and governance criteria in the field of battery materials and technologies. NAM's synthetic graphite offers significant consumer and end-user advantages including:

- ***Longer Life Batteries***. NAM's synthetic graphite leads to longer life batteries, generating less overall waste for recycling or disposal.
- ***Higher Energy Efficiency***. Improvements in process technology demonstrated by NAM reduce the amount of energy required to produce key battery materials. NAM's proprietary graphitization furnace technology was developed with the objective of being the highest efficiency graphitization technology currently available for mass production.
- ***Reduced Chemical Usage***. NAM uses no chemical purification so there are no risks of harmful chemical leaks, spills, or exposure, and no requirements for disposal of harmful chemicals.
- ***Reduced Waste Generation***. NAM is focused on high-yield technologies to produce key battery materials. [redacted] (b) (4) [redacted]
- ***Cleaner Power Inputs***. NAM is focused on sourcing power for its manufacturing from clean sources of energy generation. Our proposed location served by the Tennessee Valley Authority has an electrical grid make-up which is approximately 60% non-carbon producing sources of energy, including nuclear, hydro, wind, and solar.

As shown in *Exhibit 2-7*, key customer decisions have driven NAM's innovation in developing high-quality synthetic graphite anode material. Feedback from customers on performance of NAM's material in evaluation programs led the company to invest in its Riverside production site to scale annual production to 10,000 metric tons by the end of 2023.

NAM will evaluate all key elements of the performance of the material and production both internally and with project partners such as Argonne National Lab and Oak Ridge National Lab. [redacted]

[redacted]

(b) (4)

[redacted] Internally, the NAM engineering team will monitor and evaluate these performance metrics of the material alongside key production metrics such as product yield, energy and utilities consumption and production cost to ensure the Project delivers high performance material with the expected production costs and environmental benefits.

Overall Impact on Advancing the State-of-the-Art/Technical Baseline if the Project is Successful

NAM and BTS' proprietary battery technology, including advanced R&D, anode materials, and testing technologies have the potential to become critical components in unlocking the full performance capabilities of lithium-ion batteries while also reducing costs, thus supporting the mass adoption and growth of EVs and renewable energy.

Most significantly, the Project will bring online the first large-scale production plant of state-of–the-art EV grade battery material in the United States. The Project will serve as the basis for NAM to expand production of this key material as domestic demand continues to increase through this decade and beyond.

3—Work Plan and Market Transformation Plan

3.1—Project Objectives

The objective of this Project is to design, build, and operate a ~[redacted] ft^2 U.S.-based facility capable of producing 30,000 metric tons per year of NAM's high-performance battery-grade synthetic graphite, used to support the electrification of the domestic transportation fleet and growth in grid-scale energy storage systems (ESS).

3.2—Summary of Technical Scope

Approach

(b) (4) [redacted] As the owner-operator, NAM has selected an integrated design-build team with established working relationships to deliver the Project. NAM selected Clark Construction Company (Clark) to be the construction manager, responsible for all design, construction permitting, Project management, and Project financials. NAM selected Bergmann Architects Engineers (Bergmann) to provide Project engineering, and Bergmann will be the architect of record. [redacted].

The following is a discussion of the key high-level Project objectives broken into four budget periods over the course of the 48-month Project.

Budget Period 1: This period covers the design and construction of a ~[redacted] ft^2 manufacturing facility to house NAM's next Mass Production Lines (MPLs). This will require an appropriately sized footprint, along with required utilities and considerations for on-site management of raw goods. This building will be capable of producing 30,000 metric tons of electric vehicle battery-grade synthetic graphite at the end of the Project. Final civil, electrical, and rail design considerations will be completed for permitting and construction in the first months of this Project.

SMART Milestone: Utilities and structure construction complete and prepared for installation of processing equipment and completion of [redacted] ft^2 of production space.

SMART Milestone and Go/No Go #1: Permitting has been accepted by agencies to allow for equipment installation and operation and confirmed ready to move Project forward.

SMART Milestone from Equity Plan: Identify at least [redacted] local Minority Business Enterprises, Minority Owned Businesses, Woman Owned Businesses, and Veteran Owned Businesses vendors with qualifications to perform pre-construction and construction work (M6). Establish partnerships with at least [redacted] Minority Serving Institutions (M12).

Expected End Result: Completion of [redacted] ft^2 of the production site and utilities installed for at least one full production line capable of [redacted] metric tons per year production capacity.

Budget Period 2: This period covers the procurement and installation of all processing equipment required to produce graphite meeting offtake partner requirements. NAM uses a variety of equipment from various manufacturers to produce its product. The most important process component is our furnace technology provided by Harper International through the partnership indicated in this Project. With the long lead time to produce production equipment, procurement is expected to begin approximately 12 months into the Project. Installation will occur on equipment arrival.

SMART Milestone and Go/No Go #2: Securing sufficient financing needed to place remaining equipment orders.

SMART Milestone from Equity Plan: Provide funding of [redacted] for research and testing tasks to be performed by Minority Serving Institutions (M18). Establish workforce training programs with local institutions resulting in at least 50 jobs for under-represented individuals and those facing barriers to employment (M24).

Expected End Result: Equipment will be installed on site to support the initial phases of commissioning and process-line validation. Full equipment installation will occur on a rolling basis to meet target production output within the Project timeline.

Budget Period 3: This period involves the commissioning and confirmation of operation on all process equipment. As equipment is installed, NAM will hire and train labor to support the commissioning and operation of the process equipment. With equipment partner engineers, each piece of process equipment is commissioned to ensure expected product output and machine operation. [redacted] (b) (4) [redacted]

SMART Milestone: Samples satisfying material specifications from commissioning trials on single production line: ≥[redacted] mAh/g specific capacity and matching customer required physical and electrochemical properties.

SMART Milestone and Go/No Go #3: The first production line meets performance specifications and is validated by third party testing facilities.

SMART Milestone from Equity Plan: Support quality pre-apprenticeship programs in the local community resulting in enrollment of at least [redacted] apprentices (M36).

Expected End Result: Samples produced satisfy material specifications from commissioning trials on the single production line. This includes final graphite production with a specific capacity of ≥[redacted] mAh/g that also meets customer-required physical and electrochemical properties.

Budget Period 4: This period involves the independent validation of NAM produced materials, as well as completion of the customer qualification process on materials mass produced from the commissioned product lines. Qualification will occur through Argonne and Oak Ridge National Labs, as well as the aligned battery laboratories at Phillips 66. In parallel, mass production samples meeting offtake partner specifications will be sampled in increasing quantities for validation. Additionally, process stability and quality control performance will be proved to the offtake partners through a production part approval process (PPAP). This process is expected to last through the end of the Project [redacted]

SMART Milestone: One full production line meets performance specifications and is validated by third party testing facilities.

SMART Milestone from Equity Plan: [redacted] (b) (4) [redacted] (M40).

Expected End Result: NAM will have successfully commissioned 30,000 metric tons per year of production capacity of synthetic graphite for use in electric vehicles by the end of Q4 2025 in a facility that will allow for expansion to 75,000 metric tons per year of production capacity. The product will meet specifications and have passed qualification with Tier 1 battery manufacturers and will have the capacity to support the domestic production of an estimated 500,000 EVs annually.

3.3—WBS and Task Description Summary, Milestone Summary, and Go/No-Go Decision points

3.3.1 —Budget Period 1 Manufacturing Plant Buildout (M1–M12)

Task 1.0: Engineering Design Review and Sign-Off (M1–M10)

Task Summary: Prior to the start of this Project: NAM and Bergmann completed a high level engineering design to determine site requirements. With site selection complete, Bergmann will assist in the engineering design for this Project build out phase. This will include civil design, building design (foundation, structure, envelope, and office and amenities), utilities and switch-yard, [redacted]

Subtask	Subtask Summary	Milestone
1.1: Civil design review and signoff (M1)	Engineer site layout and orientation of manufacturing building on purchases site.	▪ NAM Management and Bergmann complete civil design scope.
1.2: Building design review and signoff (M2-M6)	Complete engineering for build construction including the foundation and structure, building envelope, and offices & amenities.	▪ NAM Management and Bergmann agree to the building design scope.
1.3: Electrical switchyard and central utilities design and signoff (M2-M5)	Complete engineering design for the electrical switchyard and the central utilities building. This will be based on a forward-looking design basis for the full site buildout.	▪ NAM Management and Bergmann agree to electrical switchyard design scope.
1.4: [redacted] design and signoff (M5-M6)	Design [redacted] (b) (4) Work with partners to design [redacted]	▪ NAM Management and Bergmann agree to [redacted].
1.5: Coke processing system design (M3-M10)	Within this design process, NAM and Bergmann will design the [redacted]	▪ NAM Management and Bergmann agree to coke receiving and processing design scope. ▪ Design is reviewed by Phillips 66 and rail provider stake holders to ensure compliance prior to permitting.

Task 2.0: Permitting (M1–M18)

Task Summary: Permitting must be completed prior to the beginning of work. Technical engineering design will need to be completed for the site according to Task 1.0 to feed into the permitting process. This includes an [redacted] Additionally, permitting must be completed for Site Disturbance, Structural Steel, Overall Building Balance, Central Utilities, and Air Permitting for emissions.

Subtask	Subtask Summary	Milestone
2.1: Site data collection (M1-M2)	All previous surveys and environmental studies related to permit requirements will be received from the information holders. Any additional studies for permitting will be completed.	▪ Locality provides all past studies on site indicating permit requirements. ▪ Additional studies required for permitting are complete.
2.2: Permit for construction application and submission (M2-M7)	Each required permit application for relevant localities will be completed and submitted to the appropriate regulatory agencies for review and approval.	▪ Permits completed and submitted for site disturbances, building foundation, structural steel, switch year, rail access, overall building balance, and central utilities. ▪ Permits are accepted to begin work.

Subtask	Subtask Summary	Milestone
2.3 A: Air Permitting (M9 – M12)	Air permitting required to any emission equipment installation and operation.	▪ Emission sources in the process flow are identified for permitting. ▪ Engineering studies completed to determine and meet permit requirements and permits are submitted.
2.4: Raw coke processing permitting (M8-M10)	Permitting required for raw coke unloading and crushing.	▪ Crushing system noise and emissions are measured and controlled for permitting.
2.5: Rail unloading of raw coke permitting (M4-M7)	Engineering design of anticipated rail layout and unloading station provided to rail provider for review and permitting.	▪ Permitting by rail company to make required changes.

Task 3.0: Construction Labor Procurement (M1–M4)

Task Summary: A sizable portion of this budget period involves contracted construction work to build the facility. Construction will be managed through NAM's project management team with construction project management partners. A plan will be produced for trade contractors for the actual build, as well as specialized contracting. These include process mechanical, electrical switchyard, process electrical, earthworks and utilities, roofing, concrete, and steel.

Subtask	Subtask Summary	Milestone
3.1: Project scoping, bid submission and acceptance (M1-M4).	Construction manager to send scope of work to area construction groups. Bids will be compared and accepted with considerations of budget, capabilities, and timelines.	▪ Bids returned from submission groups. ▪ Bids compared and accepted for work to commence. Purchase Orders submitted.

Task 4.0: Project Materials Procurement (M1–M24)

Task Summary: Significant amounts of material must be procured for the size of this Project. These include materials for the construction of the site, as well as those required for ultimate processing. Material procurement will be front loaded for long lead items, including [redacted] (b) (4)

Subtask	Subtask Summary	Milestone
4.1: Site construction material procurement (M2-M11)	Significant raw materials are required for the site construction related to this Project. Quantities must be determined in the engineering phase of Task 1.0 and ordered according to the Project management schedule.	▪ All site materials obtained to begin construction.
4.2 A: Utility installation material procurement (M1-M12)	NAM will work with local utilities and groups to ensure long lead items are procured for utilities. This includes [redacted]	[redacted] (b) (4) [redacted]

Task 5.0: Site Preparation (M3–M9)

Task Summary: The site must be prepared to account for storm water management, required facility footprint, required parking and contractor laydown during construction, utility installs, and shipping/receiving to the plant (including rail and road).

Subtask	Subtask Summary	Milestone
5.1: Site grading and preparation (M3-M8)	Site for facility must be graded according to building specifications and land topography. Rail unloading, utility placement and parking are all considered in the final site engineering determining these requirements.	▪ Site graded according to building requirements.
5.2: Rail and Road site upgrades (M4-M9)	Rail spur on site will need to be upgraded to accommodate delivery to NAM's site as well as future expansion considerations. Road access must also be considered as products will be sold via box truck.	▪ Rail upgrades commence for material storage and unloading. ▪ Roads upgraded to accept truck traffic for shipments and production labor shift flow.

Task 6.0: Utility Installation (M2–M24)

Task Summary: This task involves the connection for utilities to the plant construction, including the installation of required infrastructure. Mains must be connected for water, gas, network, and sewer. Infrastructure construction must occur for electrical substation.

Subtask	Subtask Summary	Milestone
6.1: Central Utility Building (CUB) Install (M5-M11)	Utilities required for plant operation will be centralized in a single key area. Key units for utility deployment and trenches to main building must be installed.	▪ Utility building is installed.
6.2 A: Process Utility Install (M11-M12)	Utilities from the CUB. These include process chilled water, compressed air, and transformed power.	▪ Air Compressors, Air Dryers, and Buffer Receivers are installed. ▪ Air coolers and chillers are installed. ▪ Main power utilities are installed.
6.3 A: Inert Gas Build-out (M8-M12)	Installation of required tanks for initial phases of production. [redacted] (b) (4) [redacted]	[redacted] (b) (4) [redacted]
6.4 A: Switchyard installation (M2-M12)	The switchyard will be the longest installation of any utility. Procurement and site erecting will occur right away while long lead items are on order.	▪ Switchgear site erected.

Task 7.0: Facility Buildout—Production Building (M2–M18)

Task Summary: This task involves the physical buildout of the production facilities and related infrastructure for operation and raw material supply.

Subtask	Subtask Summary	Milestone
7.1: Foundation and parking construction (M8-M10)	Construction of facility foundation for further site erecting.	▪ Parking installed suitable for employee parking at ultimate anticipated site.
7.2: Rail unloading station for receiving raw coke from Phillips 66 (M6-M10)	Unloading station designed to receive raw coke [redacted] Proper car storage and movement will be built in this phase.	▪ Rail company approves structure design to meet compliance. ▪ Unloading area, capable of unloading up to [redacted] kT of raw coke annually, is installed.
7.3: Utility routing and installation (M11-M12)	Utilities will start being brought from the CUB to their respective process areas where utilities are required within BP1.	▪ Utilities begin distribution to equipment installation areas for connection to equipment upon installation.

SMART Milestone: Utilities and structure construction complete and prepared for installation of processing equipment and completion of [redacted] ft^2 of production space.

SMART Milestone and Go/No Go #1: Permitting has been accepted by agencies to allow for equipment installation and operation and confirmed ready to move Project forward.

3.3.2 —Budget Period 2: Process Equipment Procurement and Installation (M13–M24)

Tasks Continuing from Budget Period 1 (M13–M24)

Task Summary: Continuation of Air Permitting, Utility, [redacted], and Switchyard installation tasks begun in Budget Period 1.

Subtask	Subtask Summary	Milestone
2.3 B: Air Permitting (M13-M18)	Receive final approval of the air permitting with over run into BP2 due to the permitting authority lead time.	▪ Additional emissions controls engineered on an as needed basis. ▪ Permit granted by the regulatory agencies.
4.2 B: Utility installation material procurement (M13-M24)	Some of the procured items will take many months to arrive on site. This waiting period will flow through BP1, BP2, and BP3.	▪ All required components have been received.
6.2 B: Process Utility Install (M13-M20)	Some utilities require long lead items. These will be received within BP1 through much of BP2.	▪ All main CUB utilities are fully installed including long lead items.
6.3 B: [redacted] (M13-M23)	Installation of required tanks for initial phases of production. This will include [redacted]	▪ [redacted] is installed.
6.4 B: Switchyard installation (M13-M24)	At least [redacted] MW of service is anticipated to be installed through partnerships with TVA and EPB at the Enterprise South location. Five megawatts of power will be available for the construction and startup phase of the plant, with full service available by [redacted]. Awaiting lead items will cross BP2 into BP3.	▪ Main power line is connected to TVA line adjacent to plant site. ▪ Switchgear equipment installed to > [redacted] MW.

(b) (4) [redacted]

Task 8.0: Facility Buildout – Production Building Continued (M13–M22)

Task Summary: Continuation of the physical buildout of the production facilities and related infrastructure for operation and raw material supply.

Subtask	Subtask Summary	Milestone
8.1: Structural area built to meet production height specifications and architectural ratings (M13-M17)	Building of actual production structure where process equipment installation will occur according to Task 10.0. This buildout phase will occur in BP2 on the rolling construction schedule.	▪ Structure is built with [redacted]
8.2: Roofing built to required specification to ensure environmentally controlled production space (M17-M19)	Roofing installed on structure. This buildout phase will occur in BP2 on the rolling construction schedule.	▪ [redacted] ft^2 of production space under roof of suitable type is complete.
8.3: Utility routing and installation (M13-M20)	Utilities will complete distribution in BP2 on the rolling construction schedule.	▪ Distribution completed to equipment installation areas for connection to equipment upon installation.
8.4: Offices, labs, and ammenities (M18-M22)	Offices are built to house project engineering staff and operations to support process equipment commissioning. To occur in BP2.	▪ Office and lab areas completed for support staff during BP2.

Task 9.0: Processing Equipment Procurement (M13–M24)

Task Summary: NAM will apply its existing process knowledge gained from the buildout of its 10,000 metric ton Riverside facility. Process engineering has been performed for the full integrated system to ensure equipment throughput is matched appropriately. The number and layout of these systems will determine the procurement amounts.

Subtask	Subtask Summary	Milestone
9.1: Vendor request for quote (M13-M24)	All equipment vendors and partners will provide updated quotes with their anticipated equipment production schedule.	▪ All process equipment meeting required conditions quoted for purchase. ▪ Process equipment purchase orders submitted. ▪ Equipment vendors provide schedule of equipment manufacturing and deployment to meet project deployment schedule.

Task 10.0: Processing Equipment Installation (M20–M32)

Task Summary: This task involves the installation of the equipment required to produce synthetic graphite. This includes all precursor preparation, processing unit operations, finishing, and final packaging. Each unit operation must be erected and connected to deployed site utilities. Once operational, all equipment must go through initial quality checks to ensure proper operation and material output. Qualification will be done on MPL 1 while build-out is continuing.

Subtask	Subtask Summary	Milestone
10.1 A: Precursor Process Installation (M20-M24)	[redacted] (b) (4) This material must be unloaded and pre-processed prior to entering the main facility.	▪ Precursor preparation process installation begins
10.2 A: Graphitization Production Process Installation (M20-M24)	Graphitization systems begin installation with Harper engineering support.	▪ Installation of first required furnace systems.
10.3 A: Remaining Production Process Flow Installation (M20-M24)	Start installation of all [redacted] (b) (4)	▪ Production lines [redacted] t begins.

SMART Milestone and Go/No Go #2: Securing sufficient financing needed to place remaining equipment orders.

3.3.3 —Budget Period 3: Process Equipment Commissioning (M25–M36)

Tasks Continuing from Budget Period 2 (M25–M32)

Task Summary: Continuation of production process tasks begun in Budget Period 2.

Subtask	Subtask Summary	Milestone
10.1 B: Precursor Process Installation (M25-M30)	Installation occurring as equipment and material is delivered. Rolling into BP3.	▪ Precursor preparation process installed with at least 90,000 metric tons per year of throughput capability.
10.2 B: Graphitization Production Process Installation (M25-M32)	All graphitization systems for to achieve project output have been installed. Rolling into BP3 based on equipment deliveries.	▪ Installation of furnaces reduced to 30 days per furnace after the 5th installation.
10.3 B: Remaining Production Process Flow Installation (M25-M32)	Complete installation of all [redacted] (b) (4) Rolling into BP3 based on equipment deliveries.	▪ Production lines [redacted] is complete.

[redacted]

Task 11.0: Process Equipment Commissioning (M30–M48)

Task Summary: As process equipment is installed, each piece will be commissioned for operation. This includes performing system checks, producing test material batches, and completing documentation. [redacted] (b) (4)

Subtask	Subtask Summary	Milestone
11.1 A: Material confirmation in commissioning (M30-M36)	Material samples will be produced through each process step during commissioning. Material commissioned from previous steps will be utilized to commission next steps. Confirmation of equipment operation, intended output, efficiency, yield, and production cost.	▪ Fully processed sample produced from each unit operation at scale confirmed internally to match intended specification.

Task 12.0: Production Labor Onboarding and Training (M25–M32)

Task Summary: To operate the installed equipment from task 7.0, employees must be hired and trained.

Subtask	Subtask Summary	Milestone
12.1: Hiring of commissioning staff (M25-32)	NAM to recruit and onboard staff for commissioning, including engineers, operators, management, and project managers.	▪ Hiring numbers met according to projections.
12.2: Hiring of full production staff. (M25-32)	Second phase of hiring for staff once standard work is in place and production is expanding. Additionally, hiring of QC laboratory staff.	▪ Hiring numbers met according to projections and installed capacity.

SMART Milestone: Samples satisfying material specifications from commissioning trials on single production line: ≥[redacted] mAh/g specific capacity and matching customer required physical and electrochemical properties.

SMART Milestone and Go/No Go #3: The first production line meets performance specifications and is validated by third party testing facilities.

3.3.4 —Budget Period 4: Material Evaluation and Delivery (M37–M48)

Tasks Continuing from Budget Period 3 (M37–M48)

Task Summary: Continuation of commissioning tasks begun in Budget Period 3.

Subtask	Subtask Summary	Milestone
11.1 B: Material confirmation in commissioning (M37-M48)	All equipment commissioning will require material validation. This will roll through BP4 until the Project end.	▪ Samples will be internally and externally validated as equipment is installed to ensure proper commissioning.

Task 13.0: Finished Goods Qualification (M37-M48)

Task Summary: This task is focused on customer acceptance of finished synthetic graphite anode materials produced according to the Project scope. The customer receives samples from the production lines through a qualification process external to NAM. NAM must provide proof of consistency in material output through each process step. This process typically takes the form of a Production Parts Approval Process (PPAP) and varies depending on customer requirements.

Subtask	Subtask Summary	Milestone
13.1: Verification of material – external laboratories (M37-M48)	Finished graphite generated through the process flow as built in the plant will be sent for third party verification of quality. The National Lab partners will verify material performance at the full cell level.	▪ Samples generated on full mass production process flow utilized validated in third party battery manufacturing and testing.

SMART Milestone: MPL1 meets performance specifications and is validated by third party testing facilities.

Subtask	Subtask Summary	Milestone
13.2: Customer qualification—Tier1 battery manufactures (M37-M48)	Mass production products produced in this Project will need to undergo customer evaluation. This process is dependent on customer requirements but involves submitting a representative mass production sample for testing on customer pilot lines.	▪ Samples ranging from [redacted] kg provided for customer validation. ▪ Completion of PPAP documentation. ▪ Proof of process stability on at least one process line.

3.4. SMART End-of-Project Goal

NAM will have successfully commissioned 30,000 metric tons per year of production capacity of synthetic graphite for use in electric vehicles by the end of Q4 2025 in a facility that will allow for expansion to 75,000 metric tons per year of production capacity. The product will meet specifications and have passed qualification with Tier 1 battery manufacturers and will have the capacity to support the domestic production of an estimated 500,000 EVs annually.

3.5. Project Schedule

NAM's master summary Project schedule is presented in *Exhibit3-1* on the following pages.

3.6. Buy American Statement

NAM believes that the Project does not include applicable infrastructure work that would trigger the Buy American requirements. We understand that the ultimate determination about whether our Project includes the construction, alteration, or repair of public infrastructure remains with the DOE. If required by the DOE, NAM will comply with Buy American Requirements or apply for any required waivers for all infrastructure-related work.

3.7 Project Management

Our integrated design-build (D-B) approach described in this management plan enables us to effectively align our needs with the processes and responsibilities of design engineers, architects, process/equipment engineers, construction management, and craft trades working under a single integrated delivery team led by the owner-operator NAM.

The D-B team of NAM, Clark and Bergmann are already working together on the construction of NAM's Riverside facility. NAM's proposed Key Personnel also have extensive experience collaborating as a team. This experience will lower Project risks by using a proven management team.

[redacted]

(b) (4)

[redacted]

(b) (4)

3.7.1 —Overall Approach and Organization

We intend to build on and leverage our relationships with Clark and Bergmann to complete design, permitting, construction, and commissioning of the Project at the Enterprise South site.

Exhibit 3-2 shows our proposed organizational structure. Dr. Chris Burns, CEO of NAM and NOVONIX Limited and Principal Investigator for our application, has selected Danny Deas, President of NAM, to manage and deliver the Project. Based on previous and current successful working relationships, [redacted]

(b) (4)

Below is a brief summary of the qualifications and experience of our Key Personnel.

Chris Burns: As CEO of both operating divisions of NOVONIX, [redacted]

(b) (4)

Daniel Deas: As President of NAM [redacted]

[redacted]

(b) (4)

(b) (4)

(b) (4)

3.7.2 —Project Team Member Roles

NAM is both the applicant and the owner-operator of the proposed Project. NAM selected both Clark and Bergmann for design-build activities. The companies will jointly work together with the integrated NAM leadership management team. During the commissioning phase they will provide the battery coke needed for initial production and testing.

Clark: NAM selected Clark, a full-scale commercial construction firm with a national reputation for quality, to provide construction management services for the Project. in Project Management, Planning & Estimating, Supervision, Business Development, and Marketing.

Bergmann: Bergmann is a recognized leader for architecture and engineering design services, and they have integrated closely with Clark, providing early architecture and engineering design services, visualization and 3D design, Project cost development and analysis, site and Project permitting needs, and constructability and value analysis.

3.7.3 —Critical Handoffs/Interdependencies

As an integrated team, our Project delivery organization is specifically designed to facilitate internal handoffs and optimize interdependencies. For example, our common project management systems/tools ensure that reporting and updating schedules involving multiple handoffs are not redundant, are current, and do not require some method of conversion where error can be introduced.

3.7.4 —Management Plan Overview

NAM will use pull planning project management techniques for day-to-day Project activities. Using the pull planning approach, the Project Manager communicates required end dates to all suppliers and trade contractors, who in turn provide us with critical dates and input. We then transfer the baseline schedule to a large project board where we identify, color-code, and maintain daily and weekly tasks for overall progress. The input received from all trade contractors collectively allows us to flexibly manage the scheduled activities while maintaining a critical completion date. Our integrated design-build team offers an accelerated contracting solution with less end-coordination that pulls the Project to completion, getting the end product to market faster.

For the Enterprise South site, Clark has already prepared a highly detailed conceptual estimate. We included as much detail as possible, enabling greater reconciliation with our design partners earlier in the Project and creating more accurate cost models. We used Clark Construction's Design Assist Procurement Method during final design development phase. *Exhibit 3-3* presents advantages of the pull planning approach for commercial projects. This approach readily identified nearly 50% of the Project trade costs, thus providing early budget awareness and cost certainty, while avoiding further material escalation or costly change orders.

Scheduling Methodology and Earned Value Management (EVM)

We will use Clark's proprietary Clockwork™ Scheduling Process as the end-to-end approach to Project scheduling. Scheduling begins at the conceptual phase with Trade Hour Scheduling data, progresses through the construction process using pull planning, all while maintaining accountability by tracking the Schedule Performance Index (SPI) and Percent Plan Complete (PPC).

This comprehensive EVM-based schedule management process provides schedule and cost performance assessments of both the total Project and the breakdown of its elements. It also provides tracking and management of all major activities in the Project life cycle, including design, approvals, procurement, submittals, construction, and turnover. Some of the Earned Value Metrics that we will use are shown in *Exhibit 3-4.*

The schedule is developed early in the pre-construction/design stage and is updated throughout the duration of the Project. The

Typical Government D-B Contracting (prescribed EVMS)		NAM Integrated Team pull planning Approach with Earned Value Measurement
Planning Approach	Resulting Schedule Behavior	
Change Control—Formal, prescribed protocol for modifications to the baseline schedule to formally account for all changes/schedule updates.	Schedule maintenance assumes outsized importance to Project management; completing payment milestones of owner becomes paramount to GC.	As owner-operator, NAM leads Project team; daily involvement in team reviews of progress and scheduled activities.
Design-Build (D-B)—Design-Build approach shifts more risk and liability to the general contractor (GC) and reduces participation by the owner.	Reduction of owner control results in inflexible, prescribed schedule and cost-review practices to "bridge the gap" in oversight by owners.	As owner-operator, NAM leads Project team; daily involvement on team reviews of progress and scheduled activities.

Exhibit 3-3. *Advantages of Pull Planning to the Enterprise South site D-B Approach*

Typical Government D-B Contracting (prescribed EVMS)		NAM Integrated Team pull planning Approach with Earned Value Measurement
Planning Approach	Resulting Schedule Behavior	
Government-Owner Regulation—Government must maintain fair and competitive bidding of D-B contracts in accordance with PL 104-106, a highly regulated acquisition environment.	Schedule morphs from primarily a Project management tool essential to successful Project delivery to a compliant method of providing reliable records of contract progress and payments.	As owner-operator, NAM leads Project team; provides daily involvement to team reviews of progress and scheduled activities.
Schedule Uncertainty—D-B contract notice-to-proceed, schedulers deal with more unknowns; D-B contracts typically present no more than 35% design at proposal.	Often leads to Project behavior known as the "90% syndrome" -- stagnating around a 90% completion plateau on a Project and the associated behavior of hiding rework or fault in the hold.	As owner-operator, NAM leads Project team; provides daily involvement to team reviews of progress and scheduled activities.
Hand Offs and Reporting—Stringently prescribed EVM system requirements and reporting protocols.	Reporting/updating schedules involves multiple handoffs between different information systems that are often redundant, requiring some method of conversion, and are reported in such a way to maximize payment.	As owner-operator, NAM leads Project team; all participants, including the owner, operate with the same software, systems, and required output.
D-B Approach—Federal government pursues D-B contracts to most expediently allocate funds and maximize budget execution.	Schedule communication is a critical management progress reporting process.	Schedule communication is a critical Project delivery tool and a management reporting process.

Exhibit 3-3. *Advantages of Pull Planning to the Enterprise South site D-B Approach*

required trades and hours are analyzed to develop a model of predicted labor requirements for the Project, which is used for Critical Path Method (CPM) scheduling and to measure Project progress. The Clockwork Process coupled with EVM allows for the proactive identification of problem areas so that the most effective corrective actions to mitigate the issue can be taken. This process has proven to be an accurate predictor of delays and a proactive measure for recovery plans. Some of the Earned Value Metrics that we will use are shown in *Exhibit 3-4.*

Once the phases are fully defined and the detail is available, the schedule is setup correctly. To ensure this, a Schedule Health Check (SHC) is performed based on the 14-point DCMA (US Defense Contract Management Agency) assessment as a guide for quality. Conducting the SHC will verify that the schedule provides an acceptable level of detail and information, under the following characteristics:

» Logic
» Leads
» Lags
» Relationships
» Hard Constraints
» High Float (Total Slack)
» Negative Float (Total Slack)
» High Duration

Earned Value Metric	Earned Value Metric Calculation
Budget At Complete (BAC):	Planned Value at Completion
Estimate At Complete (EAC):	Actual Costs + Estimate to Complete
Variance At Complete (VAC):	Budget at Complete – Estimate at Complete
Cost Variance (CV):	Earned Value – Actual Costs
Schedule Variance (SV):	Earned Value – Planned Value
Cost Performance Index (CPI):	Earned Value / Actual Costs
Schedule Performance Index (SPI):	Earned Value / Planned Value
Percent Plan Complete (PPC)	(Cumulative Earned Value / Budget at Complete)*100

Exhibit 3-4. *Earned Value Metrics*

» Invalid Dates
» Resources
» Missed Tasks
» Critical Path Test
» Critical Path Length Index (CPLI)
» Baseline Execution Index

Once the schedule is resource-loaded, projected hours assigned, and schedule integrity validated, the baseline to be used as the standard is agreed to by all Project stakeholders. The next step is to provide a tool to display the Planned and Earned Value in a graphical format.

We will leverage Clark's Clockwork™/Pull planning procedures both at Project kickoff and during weekly Pull planning review/update meetings which, in turn, generates the 3-week look-ahead that is redistributed to the subcontractors.

Collaborative Implementation—Pull Planning Process

Once the Project is started, we will update the schedule with established incremental progress, extracting the Earned Value from the schedule reporting period, and plotting it against the Planned Value on the baseline chart. We will utilize aspects of Lean Construction and implement pull planning with the trade contractors on a weekly basis. pull planning looks at scheduling in reverse. Based on a required end date, we receive critical dates and input from all the trade contractors. A schedule is developed on a large project board and daily and weekly tasks are identified, color coded and maintained for overall progress. The input received from all trade contractors collectively allows us to schedule the Project at a detailed level while maintaining a critical completion date.

As construction progresses, actual daily trade hours and production rates are crosschecked against the Planned Value baseline schedule and Clockwork™ projection. Variances in these data points indicate the health of the Project against plan. Irregularities in the Earned Value curve can cause peaks and valleys. We need to investigate these deviations to understand the root cause of the issue. It is important that the analysis evaluates all cause and effects, and that these are fully documented in the period's schedule report. Any shortfall in daily production is quickly identified and corrective action taken, as needed. As a result of this close production rate scrutiny, major schedule delays which would not otherwise be apparent for several days or weeks can be addressed immediately.

The Schedule Variance will be determined to indicate the variance between where we planned to be versus where we currently are *Schedule Variance = Earned Value – Planned Value*. This metric highlights whether the schedule is ahead or behind. The Schedule Performance Index (SPI), along with Percent Plan Complete (PPC), demonstrates a measure of how efficient the Project has been in accomplishing the work relative to the plan for its accomplishment.

Accountability—Percent Plan Complete

We will generate a PPC metric on a weekly basis. We measure how many activities are planned and how many are completed on time. According to the Lean Construction Institute, construction projects typically complete 60% of the activities that they plan on a weekly basis. Utilizing pull planning, Clark has averaged over 90% PPC on our projects. This is over a 30% increase over the industry average. This results in better coordination and fewer change orders.

Management Systems

Exhibit 3-5 presents the common management systems to be employed by the NAM team during the delivery of the Project.

3.7.5 —Risk Management

We start by identifying schedule risks and opportunities, and then proactively managing the risks. Our goal is to identify schedule risks and opportunities as early as possible to

Category	Activity	NAM Management System
Labor	▪ Time keeping	▪ ECMS
Estimating	▪ Estimating	▪ Destini Estimator
Scheduling	▪ Scheduling	▪ P6 and Phoenix Scheduling
Environmental Management	▪ Permitting ▪ Administrative controls	▪ NAM's ISO-14001 compliant Environmental Management program
Risk Management	▪ Risk tracking	▪ MS Excel spreadsheet
QA/QC	▪ Construction QC ▪ Plant QA/Product QC	▪ NAM's ISO 9001 compliant Quality program
Procurement	▪ Materials and supplies	▪ Clark Connect - Project Site-Project Management Software
Safety	▪ Industrial safety ▪ Construction safety ▪ Industrial hygiene	▪ Click on Safety, iAuditor

Exhibit 3-5. *Common Management Systems to be Employed by NAM During Project Delivery.*

ensure sufficient float is built into the schedule to mitigate each risk and exploit each opportunity. We then plan for potential schedule risk by the identification of mitigation/ treatment approaches and opportunity exploitation actions.

We assess and rate all program risks/opportunities on their negative/positive impact to technical performance, cost, schedule, and safety/quality. NAM uses a standard 5x5 risk matrix (*Exhibit 3-6*) when identifying and assessing risks, and our Project Manager maintains a risk register (*Exhibit 3-7*). Based on the potential impact of each risk/opportunity, the Project Manager assigns resources to mitigate the risk or exploit the opportunity and adds the mitigation/exploitation actions to the program master schedule.

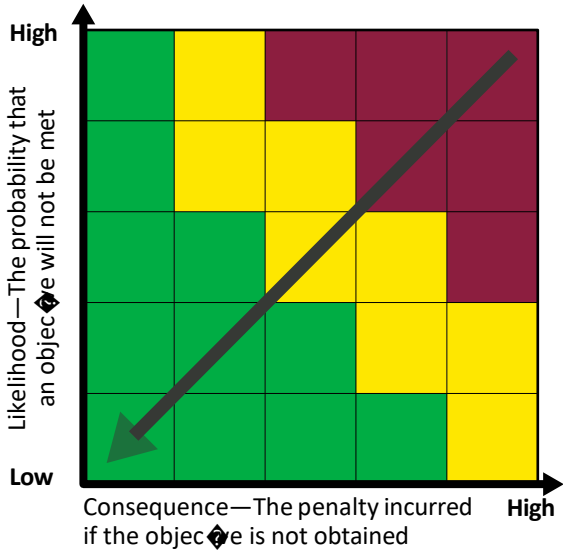


Exhibit 3-6. *NAM's Project Risk Register Uses a 5x5 Matrix to Plot Risk Likelihood Against Consequence.*

Identified Risk and Pre-mitigation Impact		Mitigation and Post-mitigation Impact	
Securing A Qualified Workforce (Labor)	Medium	Our comprehensive approach to obtaining and retaining a qualified workforce includes creating and maintaining relationships with local colleges, universities, high schools and vocational training centers. Our contractors have established relationships and agreements with the local unions as well as an excellent labor relations track record After the facility is operational, our excellent compensation and benefit package is designed around employee satisfaction.	Low
Volatile Commodity Pricing	High	Prepare bottom-up conceptual estimate rather than parametric estimate for increased visibility into commodity requirements. Employ Clark's proprietary Market Conditions Calculator to track raw material cost changes UP/DOWN, and then apply to the overall cost model.	Low

Exhibit 3-7. *Project Risks and Mitigations Identified by NAM*

Identified Risk and Pre-mitigation Impact		Mitigation and Post-mitigation Impact	
Significant Schedule Perturbations	High	Employ Clark's pull planning, which has resulted in an average >90% PPC on projects, 30% better than the Industry Average.	Low
Community Disputes	Medium	Chosen site is in a pre-existing Industrial Park so no zoning changes are required. Our Community Engagement Plan ensures buy-in from the local stakeholders early in the process.	Low
Labor Disputes	High	Our contractors have established relationships and agreements with the local unions as well as an excellent labor relations track record. After the facility is operational, our excellent compensation and benefit package is designed around employee satisfaction.	Low
Technology	High	Our innovative technology is already going through its implementation testing at our Riverside facility. This will reduce the potential technology risk significantly.	Low

Exhibit 3-7. *Project Risks and Mitigations Identified by NAM*

3.7.6 —Change Management

The goal for the Project will be to greatly reduce or eliminate unnecessary changes. All changes will be tracked in our Connect™ Project Web Portal (*Exhibit 3-8*) as Potential Change Orders (PCOs) and will be reported on a weekly and monthly basis for evaluation and decision by the NAM Team. Before any change is implemented, approval of the change by the NAM Project Manager is required.

Our Sr. Project Manager will be the single point-of-contact responsible for the following process throughout the Project:

» ***Change Is Initiated:*** A change in the Scope of Work, Project Schedule, or other Contractual Requirement may be generated by client request, field condition, Request for Information or Bulletin. The criteria used to determine whether to request a change order is based on a thorough review of the contract bid documents and specifications versus the requested change in scope of work to determine that the request is valid and necessary for the successful completion of the Project and to ensure that all client needs are defined and met.

» ***Document Review:*** Complete a review of the contract documents to confirm that the request is valid. If a Bulletin is issued, review the documents to ensure Scope of Work is adequately defined and documented as required to provide a complete estimate. Review impact on all phases of the Project.

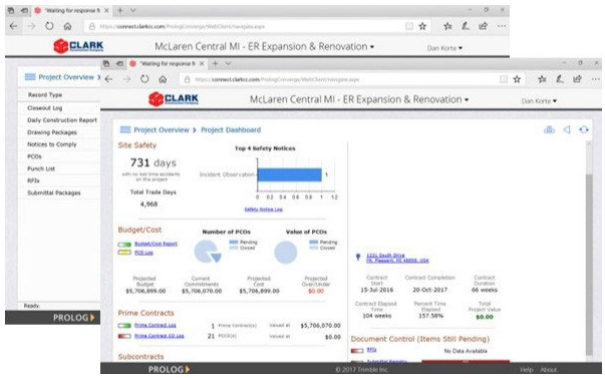


Exhibit 3-8. *We Track all Changes in Connect™ Project Web Portal as Potential Change Orders*

» ***Update Potential Change Order (PCO) Log:*** Update Connect Potential Change Order Log and Set-up PCO file.

» ***Request Trade Contractor Quotations:*** Transmit documents and request quotation from appropriate Trade Contractors.

» ***Perform Take-Off:*** Complete the take-off using Clark's Estimating Procedures, as required.

» ***Evaluate Trade Contractor Quotations:*** Receive and evaluate Trade Contractor quotations for completeness and accuracy.

» ***Finalize PCO Quotation & Submit To Client:*** Provide quotation for Change in Scope of Work and review with client and A/E for approval.

» ***Issue Prime Contract Change Order (PCCO):*** Submit PCCO to NAM and Bergmann for final approval and signature.

» ***Issue Change Orders To Trade Contractor's After PCCO Is Approved:*** The Clark Project Manager will issue Trade Contractor Change Orders upon receipt of signed Prime Contract Change Order from the client.

» ***Update Connect™ Drawing History List:*** Update Drawing History Log to include any change order documents issued by Bergmann and void any obsolete documents.

3.7.7 —QA/QC

Quality Assurance (QA) and Quality Control (QC) will be governed by NAM's ISO 9001 compliant Quality Assurance program. Clark's construction QC plan will comply with NAM QA requirements. Clark's quality management process is proactive and built on the foundation of their Corporate Procedures. For this Project, they begin during the design phase to clearly define and understand the objectives and expectations of the building program. Their efforts in estimating, scheduling, constructability reviews, and value management are focused on achieving conformance to NAM's objectives and expectations of Project quality. Their Project Superintendents are our principal quality representatives in the field, but the entire NAM team will be involved in quality assurance as well.

3.7.8 —Team Member Communication Plan

NAM's integrated delivery team D-B approach will use Clark's web-based Project management and communication application to communicate directly to all Project participants. Connect™ focuses on the following:

» Collaborative team communication
» Tracking team priorities
» Data and electronic workflow management for submittals RFIs and daily reports
» Other—materials management and meeting minutes.

Project team members can enter up-to-the-minute information through portable devices in the field. Real time reporting of safety and quality information via iAuditor, RFIs and potential change items, punch lists and drawing mark-ups allow our teams to streamline communications. Critical Project information is automatically uploaded to a single centralized database. This data is then shared throughout the Project team, from owners to architects and trade contractors to Project managers.

Exhibit 3-9 depicts an actual project team war room using pull-planning communication techniques.

ProjectSight Rolling Completion List: Clark's Rolling Completion List process is employed as each Trade Contractor completes portions of their work. The Rolling Completion List is a continuous process whereby our Project Superintendents identify any deficiencies in the work and provides each trade contractor with a list of issues and required correction time frame. This process serves to eliminate items which would otherwise be on the Project close-out punch list. We will use Connect™ to clearly communicate items that are deficient or incomplete to the trade contractors.

3.8—Market Transformation Plan

NAM is working to provide high-quality, battery-grade synthetic graphite to leading companies at the forefront of the global electrification economy. NAM is positioned as a North American leader provide battery-grade synthetic graphite

Exhibit 3-9. *We Use Pull Planning and Daily Team Briefings to Ensure the Highest Level of Communication Across the Team*

that offers cost and environmental advantages over competitors, in addition to supply diversification for battery manufacturers that currently predominantly source battery materials from Asia. These factors, combined with the global efforts to decarbonize and electrify the global economy, make a compelling business case for a U.S. manufacturing base.

3.8.1 —Target Market Description

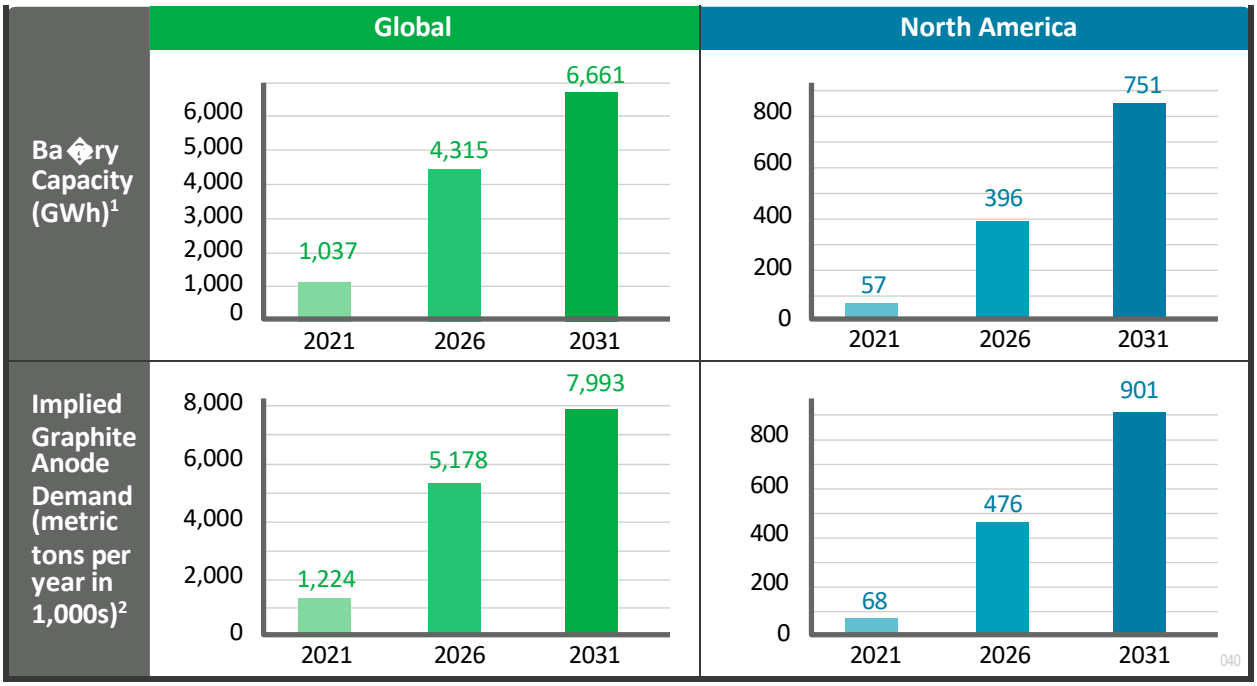
According to Benchmark, a leading consulting firm focused on the electric vehicle and energy storage supply chain, global EV penetration is estimated to grow to over 30% by 2031, requiring installed battery capacity to grow to 5,454 GWh (~5.4 million metric tons of synthetic graphite equivalent) globally by 2031 (*Exhibit 3-10)*. Additionally, demand in the energy storage market is estimated by Benchmark to increase from 12 GWh (~12,000 metric tons of synthetic graphite equivalent) in 2020 to 358 GWh (~358,000 metric tons of synthetic graphite equivalent) by 2030 (*Exhibit 3-11)*. As the demand for electric vehicles and energy storage supplies increases, so will the demand for high quality anode material for the lithium-ion battery market. NAM's technology is well positioned to address market opportunities presented by each of these electrification markets based on the high performance and long lifetime requirements for the batteries in both applications.

Competitors

Four types of products compete with NAM's synthetic graphite: (1) Asia-based synthetic graphite; (2) US-based synthetic graphite; (3) Natural Graphite; and (4) Lithium metal and Silicon anodes. *Exhibit 3-12* shows the major strengths and drawbacks of each category. Customer demand for proven graphite anode technology will continue to dominate the market well into the mid-21st century (*Exhibit 3-13*.)

Distribution Channels

NAM has established strategic partnerships that accelerate market access for its products. These partnerships are expected to help NAM scale quickly across sectors and geographies,



1. Source: Benchmark Mineral Intelligence Gigafactory Assessment—June 2022. Based on announced capacity.
2. Assumes full utilization of graphite.

Exhibit 3-10. *Global and Local Battery Growth Drives Demand for Synthetic Graphite Production*

Global Market Share[1]	0.8%	0.8%	1.9%
Volume/ Tonnage Phased Growth	Phase 1 (Current Ramp-Up) 10,000 metric tons/yr[2]	Phase 2 (Medium Scale) 40,000 metric tons/yr[2]	150,000 metric tons/yr[2]
	2023	2025	2030
NOVONIX's Illustra□ve Scale Plan[3]	NOVONIX Anode Materials annual produc□n volume would equate to: ~181K EVs per year	NOVONIX Anode Materials annual produc□n volume would equate to: ~727K EVs per year	NOVONIX Anode Materials annual produc□n volume would equate to: ~2.7M EVs per year

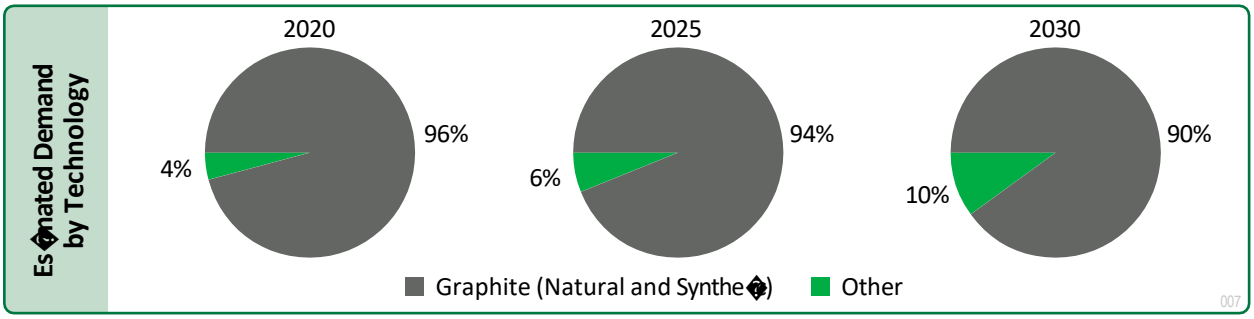
1. *Market share based off implied global graphite demand in 2021, 2026, and 2031. Source: Benchmark Mineral Intelligence Gigafactory Assessment—June 2022. Based on announced capacity and full graphite utilization.*
2. *Company expectations, which may or may not materialize.*
3. *Assumes 55kg of graphite per EV.*

041

Exhibit 3-11. *NAM has Developed a High-Confidence Growth Plan*

[redacted]

(b) (4)



Source: Benchmark Mineral Intelligence Q1 2021 Report

Exhibit 3-13. *Customer Demand for Proven Graphite Anode Technology will Continue to Dominate the Market well into the Mid-21st Century*

validate proprietary technologies for customers in new markets, and enable NAM to remain at the forefront of market trends in the development of next generation products and services.

(b) (4)

3.8.2 —Product Development/Service Plan

Product Development Plan

NAM has developed and scaled a process to produce ultra-long life synthetic graphite for grid storage applications. This product utilizes key process technologies that are applicable to most lithium-ion battery grade graphite materials. These include, [redacted]

(b) (4) . In NAM's internal R&D, several EV grades of material have undergone iterations to meet required material specifications from Tier 1 cell manufacturers. Specifications define physical properties, such as surface area and densities, as well as electrochemical performance, such as specific capacity and charge rate capabilities. Many of these parameters can be optimized through changes in feedstock (as optimized with Phillips 66) or through process conditions wholly controlled by NAM. As these EV-grade materials have been developed with customer feedback, the resulting product lines are produced with the eventual offtaker in mind.

Once a mass production sample has passed customer validation, a Production Part Approval Process (PPAP) will begin. A PPAP requires confirmation of consistent material quality, along with the quality and delivery methods that must be in place for mass production. The data contained in the PPAP must outline key process components and is provided at the request of the customer and available for audit.

In 2020, NAM's parent entered a strategic alliance with Harper to develop specialized furnace technology intended to enhance the company's synthetic graphite manufacturing process. These induction furnaces have significant advantages in thermal processing, improving the energy efficiency and product quality relative to current furnaces used for synthetic graphite production. This furnace technology has the potential to improve energy consumption in graphitization by an order of magnitude. In addition to the graphitization process, NAM has developed leading process technologies to control material characteristics such as particle morphology and surface chemistry, which is critical to the performance advantages of NAM's material over current market participants.

NAM has made significant investment in product development since formation in 2017. This includes internal research and development lines and pilot production lines at its Chattanooga facility. NAM's existing engineering team has utilized these capabilities along with our internal analytical laboratory equipment to provide samples of various grades and at different quantities to many cell manufacturers and OEMs which have shown support for the Project. Continued investment in product development both internally and with our technology partners is a priority to ensure NAM continues to produce materials with industry leading performance, production costs and environmental impact.

Commercialization Timeline

NAM is already providing materials meeting specifications for evaluation within major cell manufacturers and OEMs while also discussing potential commercial terms with the procurement teams including pricing and volume requirements from 2024–2030 with a focus on EV production increasing significantly in that time period. The terms of these agreements are expected to take the form of multi-year, multi-thousand metric ton per year supply agreements, as supported by Letters of Commitment, largely because when cell manufacturers select a material for a certain cell model, it can be used in that cell model for up to 10 years and therefore these materials are typically not sold on a spot market.

(b) (4) [redacted] Through existing relationships, NAM is offering the ability for these customers to access the planned capacity expansion by agreeing to a commercial framework in advance of the facility being commissioned when domestic production of this key material will be very limited relative to demand.

Financing

(b) (4) [redacted]

Legal/Regulatory Considerations Including Intellectual Property

NAM has taken into consideration all local, state, and federal regulatory considerations in its plans for the Project to ensure compliance. NAM's current Riverside facility similarly considered necessary regulatory considerations and most notably air quality and emissions permits for the facility which are in process within the local emission boards. NAM does not anticipate any legal or regulatory challenges with the Project as we have been working in close coordination with local partners in Chattanooga on all aspects of the planned facility. NAM does not rely on licensing any third party intellectual property that may prove to be an impediment to production. NAM's production process was developed in-house and is held as a trade secret. Additionally, NAM works closely with suppliers on customized equipment and specifically with Harper on the co-developed graphitization

furnace technology to which NAM has exclusivity and rights to utilize the equipment in the scale-up of the Project.

Infrastructure Requirements

Infrastructure requirements were a significant consideration in selecting the location for the Project. The 182-acre Enterprise South site is ideally set up for access to the critical infrastructure requirements for the facility. This includes direct access to a high-power transmission line, which has only encountered 8 milliseconds of power interruptions in the last 10 years. This ensures we have sufficient and extremely reliable power for the site. The site has access to rail in order to bring in key raw materials and process equipment and is located 6 miles from Interstate I-75, allowing for access to the major metro areas of Nashville, Knoxville, and Atlanta in under 2 hours. This allows for final product shipment via truck to anticipated customer locations. Additionally, the site is 375 miles to Savannah port to allow for sufficiently easy access to materials and equipment that may come from sea shipping off-shore. NAM can transload materials that are received by barge at our Riverside facility (with access to the Mississippi River) using the on-site 500 ton barge crane which is only 22 miles from the Project location at Enterprise South.

Data Dissemination

Our Data Management Plan is described in Section A10.

Product Distribution

NAM benefits from being geographically well positioned (*Exhibit 3-14*) next to our suppliers as well as our customers. The potential supply route could be [redacted], relative to the existing supply chain route of ~25,000 miles. Product will be distributed in super sacks either by rail or truck.

[redacted]

(b) (4)

4—Technical Qualifications and Resources

NAM has developed the most advanced, environmentally friendly, and cost-effective anode material in the market for EV and energy storage applications. NAM is a leading U.S.-based producer of battery-grade synthetic graphite with plans to create large scale domestic production. Through NAM's developed technology and partnerships, it is well positioned to support the rapid growth in demand for these advanced anode materials in North America.

This section presents the technical qualifications of NAM's team.

4.1 —Team Unique Qualifications

NAM is a leading U.S.-based producer of battery-grade synthetic graphite anode material. NAM was established to commercialize advanced and cost-effective synthetic graphite anode material for EV and energy storage applications. [redacted] (b) (4) [redacted]

NOVONIX Anode Materials (NAM)

NAM was formed in 2017 to develop and commercialize high-performance synthetic graphite anode material for the lithium-ion battery market focused on electric vehicles, energy storage, and specialty applications. NAM's synthetic graphite is produced to very high purity relative to graphite anode materials currently in the market. Based on internal testing, NAM's synthetic graphite is competitive or superior to both refined natural and synthetic graphite anode materials (which are currently almost exclusively sourced from China), in capacity, first cycle efficiency and cycle life, while maintaining competitive production cost (as measured by US$/metric ton or US$/kWh). NAM's proprietary manufacturing process is more cost-effective, energy-efficient, and environmentally friendly than predominant industry practices—driving high-quality anode processing powered by clean energy with near zero emissions.

In 2020, NAM's parent entered a strategic alliance with Harper to develop specialized furnace technology intended to enhance the company's synthetic graphite manufacturing process. These induction furnaces have significant advantages in thermal processing, improving the energy efficiency and product quality relative to current furnaces used for synthetic graphite production. [redacted] (b) (4) [redacted] thus dramatically reducing the energy requirement and associated environmental impact.

In December 2019, NAM signed a non-binding memorandum of understanding with Samsung SDI under for the large-scale purchase of NAM's anode materials. The agreement provides for an initial 500 metric tons of NAM's synthetic graphite material, subject to the satisfaction of Samsung SDI's quality assurance processes. In January 2020 NAM signed a non-binding memorandum of understanding with SANYO Electric to supply anode materials for use in lithium-ion battery technology. NAM is also pursuing offtake agreements with battery manufacturers many of whom have written Letters of Committment for the Project and are building battery production plants within a 200-mile radius of Chattanooga.

Phillips 66

NAM and Phillips 66 have had a long-standing relationship since NAM was established in 2017. In 2021, this relationship was expanded with Phillips 66 investing $150M in NAM's parent company, becoming its largest shareholder (~16%). In 2022 the companies signed a Technology Development Agreement with the focus of developing new grades of precursor materials to be converted to higher performance battery graphite with lower carbon

intensity. Phillips 66 and NAM are focused on promoting and establishing an end-to-end domestic supply chain for battery grade synthetic graphite with the opportunity to source battery coke materials for NAM from Phillips 66's facility in Louisiana and process within the Tennessee-based facility to be built in this Project. Therefore, Phillips 66 is in strong support of NAM's application as a supplier of raw materials for the commissioning of equipment with the facility and through the companies' established cooperation under the TDA. [redacted]

(b) (4)

As part of the TDA, Phillips 66 and NAM have been collaborating on the analysis of raw materials, intermediate products and final battery grade synthetic graphite products. As such the two companies have developed consistent methodologies to leverage analytical equipment, both physical and electrochemical, between both companies' laboratories. Phillips 66 works with NAM to support additional analytical activities to validate products made by NAM during commissioning and operation including physical measurements such as scanning electron microscopy imaging, BET surface area analysis, tap density, particle size distribution, and x-ray diffraction. Phillips 66 also supports electrochemical validation to measure first cycle efficiency and specific capacity (mAh/g) which will serve as the basis of data before selected materials continue to multi-amp hour cell builds and testing in other laboratories.

[redacted]

(b) (4)

[redacted]

Construction Partners

NAM has worked with our highly qualified delivery partners—Clark and Bergmann—on the retrofit of NAM's Riverside facility in Chattanooga, TN. We intend to continue this highly successful relationship on the Project complete design, permitting, construction, and commissioning of the new Enterprise South Site Facility.

Clark is a full-scale commercial construction firm with a reputation for quality. Clark's portfolio covers a wide range of projects including industrial, manufacturing, science, research and medical facilities, retail, K-12 and Higher Education, retail/mixed-use, athletic facilities and fields, corporate office buildings, correctional facilities, governmental buildings, and more.

Bergmann is a full service, multi-disciplinary design firm employing some of the most talented practitioners in the industry. Bergmann's client list spans commercial, institutional, retail, industrial and governmental sectors throughout the United States.

[redacted]

(b) (4)

[redacted]

4.3 —Relevant Previous Work

NAM: With the significant experience gained since formation in 2017, NAM is uniquely positioned to lead the Project to bring large-scale production of high-performance battery grade synthetic graphite to the United States. During the past 5 years, NAM has developed key process technology for producing these high-performance materials by: [redacted]

(b) (4)

[redacted] NAM has demonstrated the performance of this technology at research and development and mass production scale including the physical properties and electrochemical performance, leveraging the expertise in battery assembly and testing of our sister company, BTS. This has led to the significant commercial progress made by NAM with a supply agreement in place for large volumes to

Facility	Location	Type
NOVONIX Anode Materials LLC, Lookout Valley	353 Corporate Place, Chattanooga, TN 37419	Office, Laboratory, Pilot Production
Clark Construction Company	3535 Moores River Drive, Lansing, MI 48911	Office
Bergmann Architects and Engineering	7050 W. Saginaw Hwy., Ste 200, Lansing, MI 48917	Office
NOVONIX Anode Materials LLC, Riverside Plant	1125 Riverfront Pkwy, Chattanooga, TN 37402	Manufacturing

Exhibit 4-1. *NAM will Support Preconstruction Activities Using Existing Facilities*

[redacted]

(b) (4)

KORE and the significant support shown for this application from other potential customers.

NAM has already built out our 120,000 ft^2 Lookout Valley facility where we have a research and development processing capability, a full analytical lab, and our first phase of pilot production equipment to demonstrate our process technology at scale. This facility is used to provide samples to our commercial partners for processing and analysis in their labs or on their production lines. NAM has advanced to tonnage level sampling with some of our customer engagements. NAM is in the process of building out our Riverside facility currently as our first mass production site. On July 28, 2021, NAM completed the purchase of an ~404,000 ft^2 shuttered turbine manufacturing facility on the west side of Chattanooga, Tennessee (Riverside) to manufacture synthetic graphite for energy storage applications. This facility will produce graphite optimized for applications that require long-life batteries. The facility build is well underway and already supported by numerous project partners on this application including utilizing coke materials from Phillips 66, graphitization technology from Harper, and engineering and construction support from Bergmann and Clark. The existing relationships and current ongoing work further prove the unique qualification of our other project partners and large suppliers for this Application.

Clark: A nationally recognized full-scale commercial construction firm with a reputation for quality, Clark has been a leading provider in the field for 75 years. Clark's self-perform group, Clark Services (CCS), provides expertise in the areas of drywall and finishing, acoustical ceilings, rough and finish carpentry, metal stud framing, millwork, concrete, and specialty installation. Clark's portfolio covers projects ranging from industrial, manufacturing, science, research and medical facilities to retail, K-12 and Higher Education, retail/mixed-use, athletic facilities and fields, corporate office buildings, correctional, governmental buildings, and more.

Clark's executive leadership team is comprised of nine seasoned construction professionals, six of whom also represent the ownership of the company. They are supported by more than 280 team members in Project Management, Planning and Estimating, Supervision, Business Development, and Marketing. Each of their core market segments is led by an industry expert. Robert LaLonde, Senior Vice President, will be the Construction Manager for the Project.

Bergmann: Nationally recognized as a leader in architecture, engineering, planning and related disciplines, Bergmann is a full service, multi-disciplinary design firm, employing some of the most talented practitioners in the industry. Bergmann's client list spans commercial, institutional, retail, industrial and governmental sectors throughout the United States, all of whom come to with unique requirements and challenges. Bergmann has a wide range of knowledge from performing engineering at all levels for projects of various sizes. The team at Bergmann is able to apply the learning from these diverse experiences to apply best practices to all projects and applications.

Harper: A leading engineering firm globally focused on high temperature processing equipment—Harper has a history dating back almost 100 years in the United States. Harper has built many high-temperature furnace systems with different scales, heating technologies, and industries. This specifically includes induction-based systems for the graphitization of coke material into battery grade synthetic graphite. The company was granted a patent in 2005 on this type of technology but it was never brought to mass production scale. This unique experience led to NAM identifying Harper as an ideal technology partner when it was established in 2017. Harper and NAM have been working together under an exclusive agreement since 2020 pursuant to which

[redacted] (b) (4) [redacted]

Phillips 66: Uniquely positioned to support this Project, Phillips 66 has had a long relationship with NAM. Last year this relationship was strengthened by the $150M investment by Phillips 66 into NAM's parent company. Earlier this year, the companies signed a TDA with the focus of developing new grades of precursor materials to be converted to higher performance battery graphite with lower carbon intensity. As one of the only producers of feedstock materials in the United States and a global leader in the production of battery coke, Phillips 66 is uniquely able to support the Project with domestic feedstock and technical validation. Phillips 66 has significant capabilities within its Energy Research and Innovation (ERI) where it has a team working on energy materials and has had a focus on battery grade graphite for many years.

4.4—Time Commitment of Key Players

Exhibit 4-3 presents the expected time commitment for each of the key personnel participating in the Project. [redacted] (b) (4) [redacted]

4.5—Commitment of Personnel and DOE/NNSA FFRDCs

Sections 2.2 and 2.3 describe the roles of Argonne and Oak Ridge National Labs in assisting NAM with materials testing.

4.6—Declarations Regarding Materials and FEOs

NAM and all participants on our project team for the Project declare we will export no recovered or critical materials to a foreign entity of concern as defined in 42 U.S.C. 18741 (a)(5).

Furthermore, NAM and all participants on our project team for the Project commit to not use battery material supplied by or originating from a foreign entity of concern as defined in 42 U.S.C. 18741 (a)(5).

4.7—Multi-Organizational Collaboration

Our application includes only the NAM integrated delivery team and is under the technical direction of a single Principal Investigator, Dr. Chris Burns. Therefore, we have no need to integrate efforts of multiple organizations or investigators.

(b) (4) [redacted]

Key Personnel	Role	[redacted]
Chris Burns, PhD	Principal Investigator, CEO of NAM	[redacted]
Daniel Deas	Key Personnel, President of NAM	[redacted]
[redacted]	Key Personnel, Sr. Project Manager	[redacted]
[redacted]	Key Personnel, Construction Manager	[redacted]
[redacted]	Key Personnel, Architect/Engineering Lead	[redacted]
[redacted]	Key Personnel, Construction Project Manager	[redacted]

Exhibit 4-3. *Commitment of Key Personnel Participating in the Project.*

[redacted]

(b) (4)

June 28, 2022

Re: Bipartisan Infrastructure Law (BIL) Battery Materials Processing and Battery Manufacturing
DE-FOA-0002678
Letter of Commitment/ NOVONIX Anode Materials LLC
Full Application Control No. 2678-1792

To Whom It May Concern,

[redacted]

(b) (4)

(b) (4)

June 13, 2022

Dr. Chris Burns
NOVONIX Anode Materials
353 Corporate Place
Chattanooga, Tennessee 37419

Dear Dr. Burns:

Intent to Collaborate on the Proposal, "Evaluation of graphite anodes for lithium-ion batteries"

(b) (4)

DOE F 540
(04-2017)

OMB Number 1910-5175
Exp. 11/30/2020

OFFICE OF ENERGY EFFICIENCY AND RENEWABLE ENERGY

ENVIRONMENTAL QUESTIONNAIRE

SECTION I. PROJECT SUMMARY	
Control Number:	2678-1792
Project Title:	Large Scale, Energy Efficient, Domestic Production of High-Performance Synthetic Graphite Anode Material for Use in Electric Vehicles and Energy Storage Systems
Applicant:	NOVONIX Anode Materials LLC
Other Participants (Subrecipients, Contractors, etc.):	Clark Construction Company, Bergmann Architects Engineers, Argonne National Lab, Oak Ridge National Lab
FOA Number:	DE-FOA-0002678
FOA Title: Bipartisan Infrastructure Law (BIL) Battery Materials Processing and Battery Manufacturing	

SECTION II. BACKGROUND AND INSTRUCTIONS

Pursuant to the U.S. Department of Energy's National Environmental Policy Act (NEPA) implementing regulations (10 C.F.R. Part 1021), the Office of Energy Efficiency and Renewable Energy (EERE) is required to evaluate the potential environmental impact of projects that it is considering for funding. EERE must determine at the earliest possible time whether any proposed project qualifies for a categorical exclusion under 10 C.F.R.§ 1021.410 or will require further environmental review within an environmental assessment or an environmental impact statement.

You are required to answer the questions below for the project as a whole, including all work to be performed by the Recipient, its subrecipients and contractors, including any work outside of the United States. You may not limit your responses to work performed by the Recipient only unless instructed to do so by EERE. In completing this questionnaire, you must provide specific information regarding the nature of your proposed project, including information on its size, operations, and the types and quantities of air emissions, wastewater discharges, solid wastes, land disturbances, etc. You should identify the location(s) of the proposed project and describe the activities that would occur at each location.

The form should be completed and signed by the Principal Investigator for the project or another member of your organization who has sufficient knowledge of the project to answer the questions truthfully and accurately.

Failure to fully and adequately complete this form will delay EERE's environmental review of your proposed project. Please note that false statements or misrepresentations may result in civil and/or criminal penalties under 18 U.S.C. § 1001.

BURDEN DISCLOSURE STATEMENT
Public reporting burden for this collection of information is estimated to average 60 minutes per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to Office of Information Resources Management Policy, Plans, and Oversight, AD-241-2-GTN, Paperwork Reduction Project (1910-1800), U.S. Department of Energy, 1000 Independence Avenue S.W., Washington, D.C. 20585; and to the Office of Management and Budget (OMB), Paperwork Reduction Project (1910-1800), Washington, D.C. 20503.

SECTION III. PROJECT EVALUATION

1a. In the box below, please provide a brief summary of the proposed project activities. Describe physical activities, not goals and objectives. Specify if this project is part of a larger project or connected to another project.

Example: The proposed project activities include the design, development, fabrication, and field testing of advanced biomass harvesting equipment. Design, development, and fabrication activities would occur at our research and development facility adjacent to our manufacturing plant in Dearborn, Michigan. Equipment testing would occur in various agricultural fields in the surrounding area over a two-year period.

Explanation:

The proposed project activities by NOVONIX Anode Materials LLC (NAM) include the design, engineering, construction, commissioning and operation of the first large scale battery-grade synthetic graphite manufacturing facility in the US (Project). The project would be located in northeast Chattanooga, TN at 35°06'13.6"N 85°08'48.6"W. The project is a stand alone project, and is not part of another activity. The major activities on the site would consist of: clearing the 182-acre parcel site of existing structures and vegetation, soils cut/filled to reach a mean parcel-wide elevation of 775 feet above sea level, construction of a new ~[redacted] square foot facility, [redacted] (b) (4) [redacted] and continued operation and process improvement of the facility to reach a production rate of 30,000 metric tons per year of finished lithium ion battery grade synthetic graphite by the end of 2025.

1b. Is there other Federal government involvement outside of EERE in any aspect of this project (e.g., funding, permitting, technical assistance, project located on Federally administered land)?

Yes ☐ | **No** ☒

If you checked "Yes," please list the agency, describe the nature of its involvement, and provide a point of contact at the agency, if known.

Explanation:
N/A

1c. Is the proposed project limited exclusively to intellectual, academic, or analytical activities?

Intellectual, academic, and analytical activities include, but are not limited to:

- Literature searches and information gathering
- Data analysis
- Computer modeling
- Analytical reviews
- Conceptual design
- Feasibility studies
- Document preparation
- Data dissemination
- Paper studies

You must answer "No" to this question if the proposed project involves any laboratory research and/or development, physical experiments, pilot-scale projects, demonstration projects, field tests, land-disturbance, construction, or similar activities.

Yes ☐ | **No** ☒

If you checked "Yes," proceed directly to Section IV (Certification) and complete the information and signatures as requested. If you checkned "NO" you must complete the entire questionnaire.

Explanation:
N/A

If you checked "Yes," proceed directly to Section IV (Certification) and complete the information and signatures as requested. If you checked "No," you must complete the entire questionnaire.

2a. Is the project fully defined at this point (i.e., all sites and activities are known)?

Yes ☒ | **No** ☐

If you checked "No," please describe those sites and/or activities/tasks that are yet to be defined and complete the remainder of the questionnaire to the best of your knowledge.

Explanation:
N/A

2b. In the chart below, please describe the following four types of identifying information concerning project activities to be performed:

(1) each location where work would be performed, including address or coordinates, names of facilities, and whether this is a Recipient, Subrecipient, or Contractor location;
(2) the nature of the location (e.g., urban, industrial, suburban, agricultural, university campus, manufacturing facility) and the current condition and/or use of the site;
(3) the types of activities to be conducted at that location;
(4) land administration (e.g., BLM, USFWS, DOD, state, private).

(1) *List all Locations Where Project Activities Would Occur (Facility Name and Address or Coordinates) and Indicate Recipient, Subrecipient, or Contractor*	*(2)* *Nature of Location and Current Condition/Use*	*(3)* *Activities to be Performed at Each Location*	*(4)* *Land Administration*
NOVONIX Anode Materials LLC (NAM) (recipient) 1. Enterprise South property	1. Vacant site which will be purchased and the project constructed on. Approximately	1. Site clearing & prep, construction of the ~[redacted] square foot facility, installation and commissioning of the production equipment and process.	1. Currently City Property through the Enterprise South
Clark Construction Company (Clark) (Contractor) 3535 Moores River Drive, Lansing, MI	Clark's primary office location that will house some of the off-site engineering	Location of engineers who will contribute to design and project management.	Private Property
Bergmann Architects Engineers (Bergmann) (Contractor) 7050 W. Saginaw	Bergmann's primary office that will house some of the off-site architectural and engineering	Location of architects and engineers who will contribute to design and project management.	Private Property
1. Argonne National Lab (Argonne) (Contractor) 9700 South Cass	1. Argonne's facility including analytical and battery testing labs.	1. Material produced under the Project will be evaluated by Argonne within this facility for physical and electrochemical properties.	1. Federal Property 2. Federal
Example 1: Smith Laboratory (recipient) 1234 College Lane Baltimore, MD XYZ Corporation (subrecipient) 1232 Industrial Drive Golden, CO	Smith Laboratory – Dedicated University Laboratory Facility XYZ Corporation – Manufacturing Facility in Industrial Park	Activities would include design and fabrication of a gallium-nitrate battery at XYZ Corporation's battery manufacturing facility using existing equipment. The battery would then undergo testing including battery charge/discharge cycling at Smith Laboratory. Data analysis would also occur at Smith Laboratory.	Smith Laboratory – State property XYZ Corporation – Private property
Example 2: Capital High School (recipient) 1234 Eagle Lane Golden, CO	High school property in a suburban environment that has been previously disturbed and is owned by the City.	Activities would include the installation of a 50 kW wind turbine adjacent to the football stadium. The final height for the turbine would not exceed 140 feet (hub height) or 170.6 feet (maximum blade height) with a blade radius of 31.5 feet. There is an airport 15 miles away from project site location.	City

2c. In the box below, please identify and describe: (1) any known or potential health and safety hazards to the public or project workers that may result from or are associated with your proposed project; and (2) any efforts that would be taken to mitigate these hazards. Describe individually for each site discussed in Question 2b.

Example (Hazards): The project would involve the use and handling of various hazardous materials, including metals and industrial solvents. All such handling would occur in-lab, and our organization is dedicated to proper hazardous material handling and disposal practices, so the project activities that involve these materials would pose no risk to the public. All hazardous materials would be managed in accordance with Federal, state, and local environmental regulations.

Example (Mitigation): Existing corporate health and safety policies and procedures would be followed, including employee training, proper protective equipment, engineering controls, monitoring, and internal assessments. Additional policies and procedures would be implemented as necessary as new health and safety risks are identified. This would help ensure compliance with applicable health and safety regulations, and minimize health and safety risks to employees and the public.

Explanation:

For the Project to be located at 35°06'13.6"N 85°08'48.6"W, Chattanooga, TN, ("Enterprise South") [redacted]

(b) (4)

2d. In the box below, please identify and describe any of the following that would be associated with the proposed project. Describe individually for each site discussed in Question 2b.

(1) any physical modification of existing facilities or construction of new facilities (this does NOT include modification to equipment, only facilities);
(2) ground disturbing activities;
(3) any change in the use, mission, or operation of existing facilities;
(4) installation or deployment of equipment outdoors including the area of disturbance, what currently exists at the site, the dimensions of the installation, any associated infrastructure, etc.

Example 1: Physical modification of existing facilities and ground disturbing activities -To accommodate testing facilities necessary for the project, the current testing facility would have to be expanded by approximately 4,500 square feet.

Example 2: Change in use of existing facility - A room within our facility that has served as a dedicated wind tunnel would be modified to serve as an environmental test chamber. This would require the adaptation of the chamber's construction to partition off part of the room and seal it to allow generated environmental fluctuations within.

Example 3: Installation of equipment outdoors and ground disturbing activities - The proposed turbine location is on school property located in a previously disturbed area south of the existing school building and near the high school athletic facilities and fields. East of the school are two golf courses; south and north are single family residential neighborhoods; and to the west are two public park properties. There are wooded areas located on the school property to the south and west. The foundation of the wind turbine would be approximately 25 square feet with an additional 5 square feet of disturbance during construction. The foundation would be approximately 10-15 feet in depth. There would be a minor, temporary land disturbance adjacent to the proposed site for crane work and the tower staging area. Existing roads would be used to access the project location.

Explanation:

The Enterprise South property in section 2b will experience changes to infrastructure or equipment as a result of the Project. As discussed in section 1a, the Enterprise South site is the location where the [redacted] square foot facility will be constructed. The site will be leveled to a mean grade of 775 feet above sea level, through cuts and fills of approximately 55 feet, the facility constructed, and primary equipment from the vendors listed in section 2b installed and commissioned. The site is currently vacant brownfield property, having previously served from 1942 to 1977 as the Volunteer Army Ammunition Plant (VAAP), where TNT explosive was produced on the property for the US Army. The property and its facilities were deemed redundant by the Army in 1999 and the site was sold to the city of Chattanooga. The city of Chattanooga formed the Enterprise South Industrial Park committee to remediate the property and convert it to industrial use which has been deemed complete. The former VAAP structures and equipment have been stripped from the site and disposed of by the city of Chattanooga, with the exception of concrete foundations still present on the site. The site has been overtaken by vegetation and arboreal growth due to lack of activity at the site since 1977. [redacted] The graphite material will then be tested for quality, in NAM's internal laboratories and using our third party validation partners such as the National Lab listed in 2b, screened for contamination and packaged for shipment to battery manufacturers.

(b) (4)

2e. In the box below, please identify and describe any existing, modifications to, or new permits, licenses, or authorizations that would be required to perform project activities (such as environmental permits, operating permits, or drilling permits). <u>Describe individually for each site discussed in Question 2b.</u>

Example 1: The project would generate small amounts of effluent waste which will be discharged into the Potomac River, requiring our organization to secure the requisite discharge permit pursuant to state and Federal regulations.

Example 2: The project activities would be conducted for the next three years. We would be required to replace our current solid waste disposal permit with an updated permit that may alter the nature of what and how we are permitted to dispose of solid waste.

Example 3: The project activities would take place in marine navigable waters and would require permits from the U.S. Coast Guard and the U.S. Army Corps of Engineers.

Explanation:

A full spectrum of permits and certificates will be required for the Enterprise South parcel. All other sites listed in 2b are independent entities, outside of the grant requester and operate their facilities in accordance with all government regulations, certificates, and permits. Expected permits for activities at Enterprise South required for the Project include but are not limited to; demolition permit, excavation permit, NPDES industrial stormwater permit, occupancy permit, operating permit, business permit, air emissions permit, fuel burning generator installation and operation permit, and solid waste permit, in accordance with all local, state and federal regulations. It is not expected that the New Stationary Pollution Sources Subpart OOO will apply, as subpart OOO contains a specific list of nonmetallic minerals, of which petroleum coke is not listed. No other 40 CFR Part 60 regulations are expected to apply. Hazardous Air Pollutants (HAPs) have been projected based on pilot plant stack testing and do not exceed the 10 tons per year threshold for any single HAP, or the threshold of 25 tons per year for the facility as a whole. Appendix Q contains the results and projections of the Potential To Emit (PTE) projections for a 30,000 metric tons per year facility based on the pilot plant testing of both the milling and thermal processing operations. As a result, it is expected that the facility will be a classified as a minor emitter of HAPs. New Source Review (NSR) regulations include both the Prevention of Significant Deterioration (PSD) rules and the non-attainment NSR (NNSR) rules. The PSD rules apply to all regulated NSR pollutants except for those pollutants or precursor pollutants for which the area is not in attainment with the NAAQS for the specific pollutant. The NNSR rules apply for the non-attainment pollutants. Enterprise South is located in Hamilton County, which is classified as in attainment or unclassifiable for all regulated NSR pollutants. Chattanooga/Hamilton County Air Pollution Control Board incorporates the Federal PSD rules by reference in CHCAPCB Section 4-41 Rule 18. The facility to be build during the Project does not meet the definition of a major stationary source with respect to the Federal PSD rules. As presented in appendix Q, the proposed facility is not projected to have PTE emissions limits for the regulated NSR pollutants evaluated at a rate greater than 250 tons per year. Because there is no other potential source of emissions within the electric induction furnace process, or outside the mechanical milling for particulates, it is assumed only the impurities within the precursor that are volatilized in the thermal process result as emissions. Those NSR pollutants that are not known to be precursor impurities are assumed to not be emitted and are not included in appendix Q. Therefore, it is projected that the PSD regulations will not not apply, and a further in depth evaluation of PSD applicability is not expected to be required. 40 CFR Part 70 establishes the Federal Title V Operating Program (TVOP). The TVOP major source thresholds for sources in NAAQS attainment areas are 10 tons per year for any single HAP, 25 tons per year for total HAP, and 100 tons per year for any other regulated pollutant. For the same reason described above with regard to PSD, those TVOP regulated pollutants not known to be precursor impurities are assumed to not be emitted. As presented in Appendix Q, potential emissions of each regulated pollutant evaluated will be less than TVOP thresholds. Therefore, the TVOP regulations are not expected to apply to the Facility. For all other sites listed in 2b, above: These sites are separate contractors and have their own private permitting plans and controls in place, in accordance with applicable laws, rules, and regulations with respect to where they operate and are not the primary site for facility construction or operation.

2f. In the box below, please list the estimated quantities of materials to be used (e.g., feedstock, chemicals, water) and produced by the project (e.g., biofuel). <u>Describe individually for each site discussed in Question 2b.</u>

Explanation:

The target throughput annually of the proposed facility at Enterprise South 30,000 metric tons per year of finished graphite material. [redacted]

(b) (4)

[redacted] The other sites listed in 2b are private entities and operate under their own scope and supply of recourse consumption and are not the primary site for facility construction or operation and are not the primary site for facility construction or operation.

2g. In the box below, please quantify, to the extent possible, all emissions into the ambient air resulting from project activities. Indicate if the project site is within an attainment or non-attainment area. <u>Describe air emissions individually for each site discussed in Question 2b.</u>

Note: Potential emissions include, but are not limited to, greenhouse gas emissions, particulate matter, and airborne pollutants. Sources of emissions can include stationary sources, such as boilers, process heaters, generators, and/or solvent usage, or mobile sources such as vehicles. It is presumed that every project would result in some emissions being released into the ambient air, so applicants answering "none" must explain why no emissions would be released. Non-attainment areas are designated parts of the country where air pollution levels persistently exceed the national ambient air quality standards. See <u>42 U.S.C. 7501(2)</u>.

Explanation:

As extensively described in section 2a the Enterprise South facility described in this form is in a US EPA attainment area, and pilot plant level testing, scaled to the projected throughput of the facility estimates that the facility will not emit any appreciable levels of HAPs or trigger air permitting above the level of a minor emitter source. As a part of the thermal processing operation, three hazardous gases are created. The raw material is composed of 99.5% carbon, with approximately 0.5% sulfur. The sulfur is released in the heating process and is typically expressed as hydrogen sulfide (H2S) gas. In addition, at certain temperatures and atmospheric concentrations in the furnace, hydrogen and nitrogen combine to make Hydrogen Cyanide gas (HCN). In addition to the H2S and HCN gases, CO (carbon monoxide) is also produced in certain furnace operating conditions. The H2S and HCN gases are catalytically captured through a pellet media scrubber, containing inert adsorbing iron oxide pellet media. The entire exhaust gas stream is passed through this appliance prior to being released into the atmosphere. The scrubber has a 99.6% efficiency for HCN gases, and 99.8% efficiency for H2S gases. Based on the pilot plant testing, the estimated emissions rate post scrubber for the Enterprise South facility is projected to be 325 lb/year of HCN and 24.4 lb/year of H2S gases post scrubber. Non-existent/non-detectable levels of hydrocarbons and nitrous oxides were observed during sampling. The Enterprise South location is situated on a high voltage, high quality electrical transfer line, operated by the Tennessee Valley Authority. The line has seen less than ¼ second of electrical disruption in the last 15 years of service. As such, the facility is not expecting interruption of the power service, and operation of standby and backup generators would be almost exclusively limited to maintenance purposes, and would be installed and operated under the prescribed rules and regulations of the CHCAPCB rules for fuel burning emergency generators. The other sites listed in 2b are private entities and operate under their own scope of emissions generation and are not the primary site for facility construction or operation.

2h. In the box below, please describe: (1) all non-hazardous wastes that would be generated by the proposed project including recycled materials, and (2) the method of their disposal. Describe individually for each site discussed in Question 2b.

Note: It is presumed that every project would generate solid wastes, so applicants answering "none" must explain why no waste would be generated. Non-hazardous waste is any garbage, refuse or trash, sludge from a wastewater treatment plant, water supply treatment plant, or air pollution control facility and other discarded material, including solid, liquid, semi-solid, or contained gaseous material resulting from industrial, commercial, mining, and agricultural operations, and from community activities. See 40 C.F.R. § 261.2.

Explanation:

[redacted]

(b) (4)

[redacted] There will be no additional solid waste streams generated by the process in this project, and no liquid or wastewater waste streams. Standard industrial Universal Waste will be generated as a part of facility operation. NAM is committed to the environment, and will actively participate in recycling programs for all applicable and supported materials, such as paper, plastic, aluminum, and other metals for the facility. The other sites listed in 2b are private entities and operate under their own scope of waste generation and management and are not the primary site for facility construction or operation and are not the primary site for facility construction or operation.

3. Is the proposed project near, or does it involve, any of the following resources? Please indicate below any and all resources that could be affected by any project activities. (See Attachment 1 to the Environmental Questionnaire for resource definitions.)

- ☐ a. Historical, archeological, or cultural resources (includes listed and eligible resources over 50 years old or of cultural significance)
- ☐ b. Threatened or endangered species (whether proposed or listed by state or Federal governments), including their habitat
- ☐ c. Marine mammals or essential fish habitat
- ☐ d. Floodplains or wetlands
- ☐ e. Tribal lands or resources of Tribal interest/sensitivity
- ☐ f. Ocean resources (e.g., coral reefs)
- ☐ g. Land resources (e.g., tundra, rainforests)
- ☐ h. Coastal zones
- ☐ i. Migratory birds, or Golden or Bald Eagles
- ☐ j. Areas having a special designation (e.g., Federal and state designated wilderness areas, national parks, national natural landmarks, wild and scenic rivers, state and Federal wildlife refuges, and marine sanctuaries)
- ☐ k. Prime farmland, unique farmland, or other farmland of statewide or local importance
- ☐ l. Special sources of water (e.g., sole source aquifers)

If you checked any boxes above, provide a detailed description of: (1) the resources that could be affected, and (2) how project activities may affect those resources.

Explanation:
Surveys by independent contracted engineering firms, the US Army Corp of Engineers, the US Fish and Wildlife Service, the Government Services Agency, and the US Army have been completed and executed on the Enterprise South site to confirm that none of the above apply. The other sites listed in 2b are private entities and operate under their own scope and impact with regard to the above resources and are not the primary site for facility construction or operation.

4. Does the proposed project involve any of the following activities or areas of concern? Please indicate below any and all activities or areas of concern that exist in the vicinity of your project, are required for your project, or could affect your project. (See Attachment 1 for definitions of each activity or area of concern.)

- ☒ a. Clearing or excavation
- ☒ b. Dredge and/or fill
- ☒ c. Pre-existing contamination
- ☐ d. Pesticide use
- ☐ e. Asbestos or lead-based paint
- ☐ f. Polychlorinated biphenyls (PCBs)
- ☐ g. Navigable air space
- ☐ h. Underground storage tanks
- ☐ i. Underground extraction/injection
- ☐ j. Use of a non-renewable resource

If you checked any boxes above, provide a detailed description of: (1) each activity or area of concern, and (2) the effects of each activity or area of concern on your project and/or the surrounding area.

Explanation:
As discussed in previous sections of this form, the site is a former US Army TNT production facility. Trace contamination of TNT has been identified on the property, along with trace levels of lead and arsenic. Due to the site being deactivated in 1977, and existing structures demolished in 1999, significant vegetative and arboreal grown has occurred on the site and will need to be cleared for site prep. The site has a significant natural grade, changing elevation by approximately 110 feet from north to south. As a result, extensive cut and fill operations will need to be performed to bring the site to a suitable grade, projected to be at 775 feet above sea level. The net effect is that the southern half of the site will need to be cut approximately 55 feet, and the northern half of the site filled by the same amount. As a result of both the need for the cut and the fill, as well as the known contamination, no substrate or soil materials will leave the site. All materials will be used for shaping the terrain for construction.

5. Would the proposed project have the potential to result in impacts to the surrounding community? Please indicate below all areas of concern that exist in the vicinity of your project, are required for your project, or could affect your project.

- ☐ a. Visual impacts
- ☐ b. Populations of low income or minorities (Environmental Justice)
- ☒ c. Changes in local employment
- ☒ d. Changes in local traffic patterns or density
- ☐ e. New transportation access
- ☐ f. New utility lines or right-of-ways
- ☐ g. Other impacts

If you checked any boxes above, please provide a detailed description of: (1) the communities affected, and (2) what effects the project would have.

Explanation:

The Project is estimated to create approximately [redacted] direct employment opportunities in Chattanooga. NAM is committed to investing in workforce development programs and supporting a local talent pipeline to ensure community engagement and economic benefit from its investments. In partnership with the local public education system, in 2023 NAM is establishing The NOVONIX Institute of Advanced Battery Technology at a local high school, serving economically distressed communities. NAM intends to expand this program to serve other racially and economically diverse local schools and secondary education centers in Hamilton County, Tennessee, and the surrounding area with specific focus on women in STEM, veterans, and local trade schools [redacted]

(b) (4)

6. Would the proposed project use, result in, or require the management, storage, transport, or disposal of radioactive, toxic, or hazardous chemicals, waste, or other materials that require special handling?

Note: Hazardous chemicals and materials include those which, because of their quantity, concentration, or physical, chemical, or infectious characteristics, may increase the risk of mortality or pose a substantial threat to human health or the environment when improperly stored, transported, disposed of, or otherwise managed.

Yes ☒ | **No** ☐

If you checked "Yes," please provide a detailed description of: (1) the materials; (2) approximate quantity of each; (3) their role in the project; and (4) storage, transport, and disposal procedures for each material.

Explanation:

[redacted]

(b) (4)

7. **Would the proposed project involve the use or development of recombinant DNA or genetically engineered microorganisms, plants, animals, or similar technologies?**

Yes ☐ | **No** ☒

If you checked "Yes," please provide a detailed description of: (1) the genetic modifications, (2) the safety procedures in place for their handling and use over the course of the project, and (3) how they would be disposed of at the project's conclusion.

Explanation:

N/A

8. Does the project involve the use of any nanoscale materials or nanotechnology?

Note: Nanotechnology is defined as research and technology development at the atomic, molecular, or macromolecular levels using a length scale of approximately one to one hundred nanometers in any dimension; the creation and use of structures, devices and systems that have novel properties and functions because of their small size; or the ability to control or manipulate matter on an atomic scale.

Yes ☐ | **No** ☒

If you checked "Yes," please describe: (1) the nanoscale materials used, (2) potential risks those materials may pose, and (3) how they would be disposed of.

Explanation:
N/A

9. Is there any public opposition concerning any of the project activities?

Yes ☐ | **No** ☒

If you checked "Yes," please describe the nature of the opposition and any actions you may have taken or plan to take to address it.

Explanation:
N/A

10. Would the project involve activities or deployments into marine/freshwater aquatic environments?

Yes ☐ | **No** ■

If you checked "Yes," please provide a detailed description of: (1) the proposed activities or deployment, (2) where and when these activities would occur, and (3) what permit/authorizations have been or would be acquired for this activity.

Explanation:
N/A

11. Would the proposed project result in a discharge of any type of wastewater, pollutant, or contaminant, including thermal discharges, to a sewer system, stormwater system, soils, retention ponds, or any water resources (e.g., surface water, including lakes, rivers, creeks, and wetlands; and ground water)?

Note: Under Federal law, the term "pollutant" means dredged spoil, solid waste, incinerator residue, sewage, garbage, sewage sludge, munitions, chemical wastes, biological materials, radioactive materials, heat, wrecked or discarded equipment, rock, sand, cellar dirt and industrial, municipal, and agricultural waste discharged into water. See 33 U.S.C. § 1362(6). The term "contaminant" means any physical, chemical, biological, or radiological substance or matter in water. See 42 U.S.C. § 300f(6).

Yes ☐ | **No** ■

If you checked "Yes", please quantify and characterize the wastewater or pollutants and provide a detailed description of the: (1) wastewater, pollutants, or contaminants to be released; and (2) the water resources that may be affected.

Explanation:
N/A

12. Would the proposed project have the potential to generate noise impacts to adjacent communities, employees working at the project site, wildlife, and/or sensitive receptors including hospitals, schools, daycare facilities, and elderly housing?

Yes ☐ | **No** ■

If you checked "Yes", please provide a description of: (1) the receptors that may be impacted and their estimated distance from the project activities, (2) the level of noise generated (in A-weighted decibels (dbA)) to each receptor, and (3) anticipated duration.

Explanation:

N/A

13. Please provide a detailed description of how the project would be decommissioned, including the disposition of equipment and materials.

Explanation: The Enterprise South facility, upon reaching end of life, can be readily demolished and recycled, using standard commercial and industrial recycling guidelines. No hazardous materials, outside those currently present on the site as residual from the operation as the Army TNT plant from 1942-1977 will be generated. The bulk of the equipment in the facility will be of carbon and stainless steel construction and readily recyclable, and the facility will be of steel construction. Any remaining petroleum coke or graphite material on site can be sold to carbon recyclers or disposed of as standard non hazardous waste.

SECTION IV. CERTIFICATION

I hereby certify that I am authorized to submit, and I do so hereby submit, the information in this questionnaire on behalf of the Recipient named below. I certify that the information provided herein is accurate and complete as of the date shown below. I understand that false statements or misrepresentations may result in civil and/or criminal penalties under 18 U.S.C. § 1001. If I receive any information that would indicate that any of the above-referenced answers are no longer correct or complete, I agree to notify EERE immediately. If it is necessary for EERE to modify the information I provide, EERE will request that I recertify the revised form.

Name	Chris Burns
Title	CEO
Applicant	NOVONIX Anode Materials LLC
Signature	[redacted] (b) (4), (b) (6)
Date	June 29, 2022

EERE ENVIRONMENTAL QUESTIONNAIRE
ATTACHMENT 1

Definitions for Question 3 –Resources*

Historical, Archeological, or Cultural Resources. The National Historic Preservation Act; the Historic Sites, Buildings and Antiquities Act; the American Indian Religious Freedom Act; and the Archeological Recovery Act provide for the preservation of sites, buildings, structures, or objects of historic, archeological, or architectural significance designated by Indian, Federal, state, or local governments or listed or eligible for listing on the National Register of Historic Places. The Archeological Resources Protection Act, Antiquities Act, and Native American Graves Protection and Repatriation Act also apply if the proposed project is on Federal and tribal land. This item should be checked "yes" if a proposed project is in an area that meets any of the above, or if an archeological survey has not been performed. Provide documentation of any consultation or State Historic Preservation Officer determination letters if available. If this information is not available or a survey has not been conducted recently, DOE may require such a survey to be conducted prior to any proposed project implementation.

Threatened/Endangered (T/E) Species and/or Critical Habitat. The Endangered Species Act provides for protection of animals, birds, fish, plants, and other living organisms that are in danger of extinction. A list of T/E species is provided in 50 C.F.R. Part 17. Consultations with the U.S. Department of Interior Fish and Wildlife Service (FWS), National Marine Fisheries Services (NMFS), and the corresponding state agency should be documented. This item should be checked "yes" if any state- or Federally-listed or proposed threatened or endangered species or critical habitat is located in the proposed project area, or could be indirectly affected by the proposed project. If the status of T/E species at the proposed project location is unknown, please contact the local or state office of the FWS or NMFS to obtain a listing of potential species and habitats found in the area.

Floodplains. Floodplains are lowlands adjoining inland and coastal waters with a 1 percent or greater chance of inundation in any given year. Indicate "yes" if the proposed project location is in or adjacent to a floodplain area. If documentation is available noting the floodplain boundaries, please provide a copy. Appropriate documentation of the 100 year floodplain [or 500 year floodplain for critical actions**] boundaries include: Flood Insurance Rate Maps or Flood Hazard Boundary Maps prepared by the Federal Emergency Management Agency (FEMA) of the U.S. Department of Homeland Security. Executive Order 11988 Floodplain Management requires Federal agencies to avoid incompatible development in floodplains, and consider the conformance of the proposed project to floodplain standards, potential effects of the proposed projects on floodplains, and potential effects of floodplain modifications on other local properties and improvements.

** Critical actions as defined in the Implementing Guidelines to Executive Order 11988 are activities for which chance of flooding is too great.

Wetlands. Wetlands are areas inundated by surface or groundwater with a frequency sufficient to support a prevalence of vegetative or aquatic life that requires saturated or seasonally saturated soil conditions for growth and reproduction, [10 C.F.R. 1022.4]. Wetlands generally include swamps, marshes, bogs, and similar areas such as sloughs, potholes, wet meadows, river overflow, mudflats, and natural ponds. Man-made ponds can qualify as wetlands if invasion of appropriate flora or fauna has occurred. Appropriate documentation of presence or absence of wetlands within the area of project effect includes: FWS National Wetlands Inventory; U.S. Department of Agriculture Soil Conservation Service Local Identification Maps; U.S. Geological Service (USGS) Local Identification Maps; USGS Topographic Maps; state wetland inventories; and regional or local government sponsored wetland and land use inventories. Executive Order 11990 Protection of Wetlands requires Federal agencies to consider the effects of proposed projects on wetlands, and to avoid, to the extent possible, destruction and modification of wetlands. If the status of land in or around the proposed project location is unknown, please contact the state or local U.S. Army Corps of Engineer's office.

Coastal Zones. Coastal zones are the coastal waters and adjacent shore lands of the Great Lakes, and the Atlantic, Pacific, and Arctic Oceans, Gulf of Mexico, and Long Island Sound. The term "coastal state" includes the states bordering on those bodies, plus Puerto Rico, the Virgin Islands, Guam, the Commonwealth of Northern Mariana Islands, and the Trust Territories of the Pacific Islands and American Samoa. Coastal states have authority regarding actions, which directly affect coastal zones, in accordance with the Department of Commerce regulations promulgated under the Coastal Zone Management Act. Federal activities and Federal development projects must be consistent with state coastal zone management (CZM) programs to the maximum extent possible. Federal activities are those performed by or on behalf of a Federal agency in the exercise of its statutory responsibilities. Indicate "yes" if the proposed project is located in a coastal zone State or is in the vicinity of a coastal zone State. If a consistency determination has been obtained, or a written "negative determination" (indicating that a consistency determination is not required) please provide a copy. See 15 C.F.R. 930.

Migratory Birds, Golden or Bald Eagles. Other Federal and state laws that protect wildlife species include the Bald and Golden Eagle Protection Act and the Migratory Bird Treaty Act. Examples of protected migratory birds include Canadian geese and great blue herons. This item should be checked "yes" if the proposed project may directly or indirectly impact any of these species or their habitats. If the status of other protected species is unknown in the proposed project location, please contact the local or state office of the FWS to obtain a listing of potential species and habitats found in the area.

Areas Having a Special Designation. Various Federal laws restrict the ability of Federal agencies to aid developments affecting national wilderness areas, national memorial parks, national parks, national monuments, national primitive areas, national preserves, national recreational areas, national wild and scenic rivers, national grasslands, national wildlife refuges, national forests, national lakeshore or seashore, and national trails. Indicate "yes" if any of these areas of special environmental or natural significance is located in close proximity to the proposed project location and describe the specific special designation.

Prime Farmland, Unique Farmland, or Other Farmland of Statewide or Local Importance. The Farmland Protection Policy Act requires Federal agencies to consider ways to lessen the effects of proposed projects that convert or adversely affect prime farmland which is not currently classified or designated for future urban development or water storage. Prime farmland is land that has the best combination of physical and chemical characteristics for producing food, feed, fiber, forage, oilseed, and other agricultural crops with minimum inputs of fuel, fertilizer, pesticides, and labor, and without intolerable soil erosion. Prime farmland also includes land that possesses the above characteristics, but is being used currently to produce livestock and timber. Prime farmland does not include lands designated for future urban development, such as land that has been identified for commercial, industrial, or residential development by zoning code, ordinance, or a comprehensive land use plan [7 U.S.C. 4201(c)(1)]. The U.S. Department of Agriculture Natural Resource Conservation Service (NRCS) field office serving the area can provide assistance in determining whether a proposed location or site meets the definition of prime farmland. Form AD 1006, the Farmland Conversion Impact Rating Form, available at NRCS offices, should be used for this purpose.

Special Sources of Water. Through the Safe Drinking Water Act, EPA and states designate Critical Aquifer Protection Areas and Sole or Principal Source Aquifers, and State-Designated Wellhead Protection Areas in accordance with 42 U.S.C. 300h-6(b), 42 U.S.C. 300h-3(e), and 42 U.S.C. 300h-7(e), respectively. Such areas are accorded special protection to assure the quality and availability of public water supplies. Indicate "yes" if the proposed project is located in an area designated for protection (e.g., is included in an area wide groundwater quality protection plan), or would constitute a potential source of contamination within an existing or expected wellhead protection area serving a public water supply. If aquifer designations are not known for the proposed project area, contact the environmental protection office for the State.

* Definitions and requirements are subject to regulatory changes.

Definitions for Question 4 – Activities or Areas of Concern*

Clearing or Excavation. Clearing or excavation refers to the removal of vegetation, soil, sediments, or disturbance of land surfaces and subsurface including cutting, burning, digging, grading, filling, or blasting. Provide the estimated area to be affected, the quantity of material to be added or removed, and the planned disposition of spoils. Describe the potential for runoff or erosion, any control techniques to be employed, and the distance to nearby surface water bodies, including wetlands.

Dredge and/or Fill. Dredge and/or fill are the excavation of material from waters of the United States. Filling is the discharge of material into waters of the United States to change the bottom elevation. Waters of the United States are all interstate waters, and intrastate lakes, rivers, streams, mudflats, wetlands, sloughs, plays, or natural ponds. These activities include "ocean dumping" as regulated under Sections 102 and 103 of the Clean Water Act, construction of dams, dikes, piers, or others that could alter the course of waters of the United States. Also included is any shore activity with the potential for runoff to waters of the United States. If available, include documentation of appropriate consultation(s), e.g., with the U.S. Army Corps of Engineers under Section 404 of the Clean Water Act or Sections 9 and 10 of the Rivers and Harbors Act; and with EPA [40 C.F.R. Parts 220-233].

Pre-Existing Contamination. Indicate if the proposed project will disturb hazardous substances, pollutants, contaminants, or Comprehensive Environmental Response and Liability Act (CERCLA)-excluded petroleum and natural gas products that pre-exist in the environment. Quantify and characterize such pre-existing substances, including whether they are present above background or regulatory levels. Also quantify the volume of contaminated materials (e.g. soil, sediment, groundwater, debris, etc.) which would require transport to a properly permitted treatment, storage, or disposal facility as the result of the proposed project.

Pesticide Use. A pesticide is a substance intended for preventing, destroying, repelling, or mitigating any type of pest including insects, rodent, nematode, fungus, or weed, and any substance intended for use as a plant regulator, defoliant, or desiccant. While the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) imposes no requirements on private applicators, commercial pesticide applicators must be certified by the state or U.S. EPA. Additionally, FIFRA requires that certain pesticides known as "restricted use pesticides" (listed in 40 C.F.R. 152.175) to only be applied by certified applicators. If either commercial or private pesticide application or the utilization of restricted use pesticides is anticipated, indicate "yes". If a private application is anticipated, document measures to be undertaken to assure safe storage, use, and disposal.

Asbestos. If the proposed project includes demolition or renovation of an existing building, you must determine if asbestos is present. Common asbestos-containing building materials may include but are not limited to floor tile, mastics, wall board, joint compound, acoustic ceiling tiles, thermal insulation, spray-on fire proofing, glazing, caulking, roof flashing, and felts. Demolition and renovation activities that may impact asbestos containing building materials are regulated by the U.S. Occupational Health and Safety Administration (OSHA) through the Asbestos in Construction Standard and asbestos air emissions from asbestos abatements are regulated by the EPA as a hazardous air pollutant under the Clean Air Act (CAA). Include a description of measures to be undertaken to comply with asbestos removal requirements of 29 C.F.R. 1926.1100 and 40 C.F.R. 61 (Subpart M).

Polychlorinated Biphenyls (PCBs). PCBs are a family of man-made organic chemicals that were domestically manufactured from 1929 until banned in 1979 due to their toxicity and persistence in the environment. Given their non-flammability, chemical stability, high boiling point, and electrical insulating properties, PCBs were largely used as dielectric and coolant fluids in transformers, capacitors, electric motors, etc. Manufacture, processing, transport, use, marking, storage, and disposal of PCBs are regulated by EPA [40 C.F.R. Part 761] in accordance with the Toxic Substances Control Act. Some states also regulate PCBs as hazardous waste. If the proposed project involves replacement or removal of capacitors, transformers, voltage regulators, circuit breakers, switches, cables, electromagnets, or other electrical equipment, presence or absence of PCBs should be ascertained. A "yes" indication

should be supported with information on the anticipated concentration and quantity of PCB oil, and the intended method/location of disposal.

Navigable Air Space. The U.S. Department of Transportation Federal Aviation Administration (FAA) regulates objects which invade navigable air space or otherwise constitute an obstruction to air navigation, and determines whether such activities constitute a navigation hazard. Indicate "yes" if the proposed project involves construction or alteration more than 200 feet above ground level, any construction or alteration in instrument approach areas, and other construction or alteration identified in 14 C.F.R. 77.13. Document notification of the appropriate Manager, Air Traffic Division, of the FAA Regional Office for the area within which the construction or alteration will be located. Copies of FAA Form 7460-1 Notice of Proposed Construction or Alteration may be obtained from the regional FAA office or electronically through FAA's website.

Underground Storage Tanks. Indicate "yes" if 10 percent or more of tank volume (including the volume of underground pipes) will be beneath surface of the ground. Indicate if installation, use, or removal of underground storage tanks is anticipated, and whether tank use is/was for storage/collection of hazardous waste, heating oil, other petroleum or petroleum-based substances, stormwater, or wastewater. Describe any leak detection/monitoring methods to be used for storage of hazardous waste or regulated petroleum products like gasoline or diesel.

Underground Extraction/Injection. Underground extraction/injection is the subsurface emplacement of fluids through a bored, drilled, or driven well, or through a dug well where the depth of the well is greater than the largest surface dimension. If the proposed project involves construction or use of an injection well, indicate "yes," and describe the class of the well as defined in 40 C.F.R. 146.5, the type and quantity of contaminants (e.g., waste disposal, hydrocarbon or mineral extraction) and whether the injection involves an exempt aquifer as defined in 40 C.F.R. 146.4.

Use of a Non-Renewable Resource. Non-renewable resources are naturally occurring substances (e.g., metals, minerals, fossil fuels) that are in limited supply and cannot be replaced or regenerated. The exhaustion or threatened exhaustion of such resources could have significant ramifications. Indicate "yes" if the proposed project would involve a resource that is in limited supply.

* Definitions and requirements are subject to regulatory changes.