

**U.S. DEPARTMENT OF ENERGY
OFFICE OF ENERGY EFFICIENCY AND RENEWABLE ENERGY
NEPA DETERMINATION**



RECIPIENT: North Carolina State University

STATE: NC

PROJECT TITLE : PowerAmerica Institute

Funding Opportunity Announcement Number DE-FOA-000683	Procurement Instrument Number DE-EE0011003	NEPA Control Number GFO-0011003-001	CID Number
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Based on my review of the information concerning the proposed action, as NEPA Compliance Officer (authorized under DOE Policy 451.1), I have made the following determination:

CX, EA, EIS APPENDIX AND NUMBER:

Description:

A9 Information gathering, analysis, and dissemination

Information gathering (including, but not limited to, literature surveys, inventories, site visits, and audits), data analysis (including, but not limited to, computer modeling), document preparation (including, but not limited to, conceptual design, feasibility studies, and analytical energy supply and demand studies), and information dissemination (including, but not limited to, document publication and distribution, and classroom training and informational programs), but not including site characterization or environmental monitoring. (See also B3.1 of appendix B to this subpart.)

A11 Technical advice and assistance to organizations

Technical advice and planning assistance to international, national, state, and local organizations.

B3.6 Small-scale research and development, laboratory operations, and pilot projects

Siting, construction, modification, operation, and decommissioning of facilities for smallscale research and development projects; conventional laboratory operations (such as preparation of chemical standards and sample analysis); and small-scale pilot projects (generally less than 2 years) frequently conducted to verify a concept before demonstration actions, provided that construction or modification would be within or contiguous to a previously disturbed or developed area (where active utilities and currently used roads are readily accessible). Not included in this category are demonstration actions, meaning actions that are undertaken at a scale to show whether a technology would be viable on a larger scale and suitable for commercial deployment.

B5.15 Small-scale renewable energy research and development and pilot projects

Small-scale renewable energy research and development projects and small-scale pilot projects, provided that the projects are located within a previously disturbed or developed area. Covered actions would be in accordance with applicable requirements (such as local land use and zoning requirements) in the proposed project area and would incorporate appropriate control technologies and best management practices.

Rationale for determination:

The U.S. Department of Energy (DOE) is proposing to provide funding to North Carolina State University (NC State) to lead the efforts of PowerAmerica: The Next Generation Power Electronics Manufacturing Innovation Institute (referred to interchangeably as "PowerAmerica" or "Institute"). The Institute is planned as a consortium established under a Cooperative Agreement with the DOE and led by NC State (the prime recipient), with participation from sub-recipients of the award, member companies, universities and other educational institutions, as well as other state and federal government agencies and research organizations. This award is a renewal of the PowerAmerica Institute (original award DE-EE0006521).

The five-year renewal award would be limited to intellectual and laboratory-scale activities, and will consist of 3 budget periods, with all budget periods involving the same breakdown of tasks. Under the current effort, the Institute would establish a laboratory-to-fabrication effort for the generation of silicon carbide (SiC) and gallium nitride (GaN) power electronics chip fabrication in the United States through Power America. The effort would also include management and operations, protecting associated intellectual property, offering training, tutorials as well as an annual meeting and summer workshop each year during the 3 budget periods.

At this stage, only the prime awardee (NC State) is included as a performer and, as of now, the laboratory at NC State is the sole location where award work would be performed. Additional projects/partners (i.e. new subrecipients and new locations) would be added in the future following the established institute processes. As a result, this NEPA determination is deemed final, but includes several conditions below.

The project award activities that would take place at dedicated NC State laboratories in Raleigh, North Carolina would include the development and testing of high voltage power electronics. The power electronics lab has a Safety Plan

approved by the facilities operations department. There are lock-out/tag-out protocols, personal protective equipment, dedicated high voltage cages, isolation equipment, power disconnects, and laboratory access restrictions that serve to protect students and staff engaged in those activities.

No air or water emissions would be generated by the power electronics development and testing associated with this award.

All project work would be performed at the recipient's purpose-built facilities in North Carolina, with no modification of the existing facilities, ground disturbances, changes in use of facilities or outdoor equipment installations. No additional permits, licenses, or authorizations would be required. DOE does not anticipate any impacts to resources of concern due to the proposed award activities.

Additional entries in question 2b of the EQ-1 document may be incorporated as new partners are brought into the PowerAmerica project and specific sites are identified as long as these additional entries conform to the rationale and CXs applied in this NEPA Determination. Any new sub-recipients that do not fit the above would be required to submit separate EQ1s for further review.

Any work proposed to be conducted at a federal facility may be subject to additional NEPA review by the cognizant federal official and must meet the applicable health and safety requirements of the facility.

NEPA PROVISION

DOE has made a final NEPA determination.

Include the following condition in the financial assistance agreement:

The recipient is required to submit information to the DOE Project Officer and the NEPA Compliance Officer regarding the location of the facilities and a description of proposed activities for each new sub-recipient that is brought into the PowerAmerica project. Any new sub-recipients with proposed activities that do not conform to the rationale and CXs applied in the existing NEPA Determination would be required to submit separate EQ1s for further review.

The recipient is required to consult with the DOE Project Officer and NEPA Compliance Officer regarding any project that could result in:

- construction of new facilities or other ground disturbing activities; or
- modifications to existing facilities that increases the output or scale of current activities; or
- changes the type of activities that occur at an existing facility

prior to initiating any of these activities in order to determine whether additional NEPA review is required

Notes:

Advanced Materials and Manufacturing Technologies Office
NEPA review completed by Chris Akios, 05/16/2024

FOR CATEGORICAL EXCLUSION DETERMINATIONS

The proposed action (or the part of the proposal defined in the Rationale above) fits within a class of actions that is listed in Appendix A or B to 10 CFR Part 1021, Subpart D. To fit within the classes of actions listed in 10 CFR Part 1021, Subpart D, Appendix B, a proposal must be one that would not: (1) threaten a violation of applicable statutory, regulatory, or permit requirements for environment, safety, and health, or similar requirements of DOE or Executive Orders; (2) require siting and construction or major expansion of waste storage, disposal, recovery, or treatment facilities (including incinerators), but the proposal may include categorically excluded waste storage, disposal, recovery, or treatment actions or facilities; (3) disturb hazardous substances, pollutants, contaminants, or CERCLA-excluded petroleum and natural gas products that preexist in the environment such that there would be uncontrolled or unpermitted releases; (4) have the potential to cause significant impacts on environmentally sensitive resources, including, but not limited to, those listed in paragraph B(4) of 10 CFR Part 1021, Subpart D, Appendix B; (5) involve genetically engineered organisms, synthetic biology, governmentally designated noxious weeds, or invasive species, unless the proposed activity would be contained or confined in a manner designed and operated to prevent unauthorized release into the environment and conducted in accordance with applicable requirements, such as those listed in paragraph B(5) of 10 CFR Part 1021, Subpart D, Appendix B.

There are no extraordinary circumstances related to the proposed action that may affect the significance of the environmental effects of the proposal.

The proposed action has not been segmented to meet the definition of a categorical exclusion. This proposal is not connected to other actions with potentially significant impacts (40 CFR 1508.25(a)(1)), is not related to other actions with individually insignificant but cumulatively significant impacts (40 CFR 1508.27(b)(7)), and is not precluded by 40 CFR 1506.1 or 10 CFR 1021.211 concerning limitations on actions during preparation of an environmental impact statement.

The proposed action is categorically excluded from further NEPA review.

SIGNATURE OF THIS MEMORANDUM CONSTITUTES A RECORD OF THIS DECISION.

NEPA Compliance Officer Signature:  **Electronically Signed By: Andrew Montano** _____ Date: 5/20/2024
NEPA Compliance Officer

FIELD OFFICE MANAGER DETERMINATION

- Field Office Manager review not required
- Field Office Manager review required

BASED ON MY REVIEW I CONCUR WITH THE DETERMINATION OF THE NCO :

Field Office Manager's Signature: _____ Date: _____
Field Office Manager