

PMC-ND

(1.08.09.13)

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

**RECIPIENT:** North Carolina State University**STATE:** NC**PROJECT TITLE:** PowerAmerica: The Next Generation Power Electronics Manufacturing Innovation Institute

Funding Opportunity Announcement Number	Procurement Instrument Number	NEPA Control Number	CID Number
DE-FOA 0000683	DE-EE0006521	GFO-0006521-BP6	G06521

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.

B1.31 Installation or relocation of machinery and equipment Installation or relocation and operation of machinery and equipment (including, but not limited to, laboratory equipment, electronic hardware, manufacturing machinery, maintenance equipment, and health and safety equipment), provided that uses of the installed or relocated items are consistent with the general missions of the receiving structure. Covered actions include modifications to an existing building, within or contiguous to a previously disturbed or developed area, that are necessary for equipment installation and relocation. Such modifications would not appreciably increase the footprint or height of the existing building or have the potential to cause significant changes to the type and magnitude of environmental impacts.

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.

B3.15 Small-scale indoor research and development projects using nanoscale materials Siting, construction, modification, operation, and decommissioning of facilities for indoor small-scale research and development projects and small-scale pilot projects using nanoscale materials in accordance with applicable requirements (such as engineering, worker safety, procedural, and administrative regulations) necessary to ensure the containment of any hazardous materials. Construction and modification activities would be within or contiguous to a previously disturbed or developed area (where active utilities and currently used roads are readily accessible).

Rationale for determination:

The U.S. Department of Energy (DOE) provided federal funding to North Carolina State University (NC State) to establish, effectively manage, and assess the performance of PowerAmerica: The Next Generation Power Electronics Manufacturing Innovation Institute (referred to interchangeably as "PowerAmerica" or "Institute"). The Institute is 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. The Institute defined and managed a program to enable the next generation of energy-efficient, high-power electronic chips and devices by making wide bandgap (WBG) semiconductor technologies cost-competitive with current silicon-based power electronics. Federal funding was provided in budget period 1 (BP1) through BP5. This NEPA determination is specific to BP6, which is funded exclusively from program income that was generated in BP1-BP5. A NEPA Determination has been completed for BP1 (GFO-0006521-001; 11/14/2014), BP2 (GFO-0006521-002; 06/13/2016), BP3 (GFO-0006521-BP3; 07/10/17),

BP 4 (GFO- GFO-0006521-BP4; 6/22/18) and BP5 (GFO-0006521-BP5; 6/18/19). No additional budget periods are anticipated.

Member Initiated Projects in BP6 would include activities that are of the same type and scale as previously reviewed activities in BP1-BP5. One new project partner is being added at this time. The location of the new partner's facility and description of proposed activities is detailed within question 2b of the completed EQ1 for the project. All proposed activities in BP6 are generally laboratory scale operations; equipment installation; data analysis and modeling; or educational, managerial, and reporting activities. All materials associated with the proposed activities would be managed and handled in accordance with Federal, state, and local environmental regulations. The scope of work proposed at each facility fits within the type and scale of activities that already occur at each site and is consistent with current operations. The expansion or modification of facilities is not expected to occur. No new permits, licenses or authorizations would be required for BP6 activities. No new waste streams or effluents would be produced as a result of the proposed activities.

Nanoscale materials would be used during the project. All handling of such materials would occur in-lab and all health and safety procedures would be followed at each facility. All nanoscale materials would be disposed of in accordance with local, state and federal regulations.

Additional entries in question 2b 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 will 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 will 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:

This NEPA Determination requires a tailored NEPA provision.
Advanced Manufacturing Office
Diana Heyder 04/7/21

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: Casey Strickland Date: 4/9/2021
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