

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



RECIPIENT: Fang Luo/Stony Brook University

STATE: NY

PROJECT TITLE : MREvolution: A Scalable and Self-Coordinated Power Conversion Architecture

Notice of Funding Opportunity Number
DE-FOA-0003097

Procurement Instrument Number
DE-EE0011700

NEPA Control Number
GFO-0011700-001

CID Number
GO11700

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:

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.

Rationale for determination:

The U.S. Department of Energy (DOE) is proposing to provide federal funding to Stony Brook University to develop a comprehensive, scalable, modular, and self-coordinated power converter framework for advancing Marine Renewable Energy (MRE) sources, including design, simulation, fabrication, and laboratory testing of the proposed power converter.

Project activities would be conducted at Spellman High Voltage Power Electronics Laboratory at Stony Brook University in Stony Brook, NY. The power converter would be tested with high power amplifiers, hardware-in-loop simulators, and grid simulator in a laboratory environment. The team would also include field trials of this design by deploying the device either in a simulated field environment or actual marine laboratory field testing environment.

All project efforts that fall within Tasks 1 through 5 and Task 8 would occur within the laboratory described above. This facility is purpose-built to perform the work that would be performed there, and no facility modifications, ground disturbances, changes in facility use, or outdoor equipment installations would occur. No additional permits, licenses, or authorizations would be required for these efforts. DOE does not anticipate any impacts to resources of concern due to the proposed award activities.

Activities under Tasks 6 through 7 and Task 9 would either involve or be directly related to the field testing of the power converter at a currently unknown outdoor marine demonstration site or a facility-based simulated field environment that would be identified in the future. Efforts associated with either field or simulated field testing would require further NEPA review once the site has been identified; as such, Tasks 6 through 7 and Task 9 activities are not included in this NEPA Determination.

Potential project hazards under Tasks 1 through 5 and Task 8 include electrical safety hazards that can occur during testing as well as chemical and mechanical safety hazards that may occur during fabrication efforts. Existing institutional health and safety policies, including mandatory employee training, use of appropriate personal protective equipment, engineering controls and adherence to standard safety procedures would be followed. Compliance with federal, state, and local health and safety regulations would be maintained throughout the project to ensure the safety of all personnel. Additional policies and procedures would be implemented as new health and safety risks are identified.

DOE has considered the scale, duration, and nature of proposed activities to determine potential impacts on resources, including those of an ecological, historical, cultural, and socioeconomic nature. DOE does not anticipate impacts on these resources which would be considered significant or require DOE to consult with other agencies or stakeholders.

For Categorical Exclusion Determinations:

- The proposal fits within a class of actions that is listed in Appendix B to 10 CFR Part 1021 or Appendix B and C of DOE's NEPA Implementing Procedures (June 30, 2025). To fit within the classes of actions listed in Appendix B to 10 CFR Part 1021, or Appendix B of DOE's NEPA Implementing Procedures, a proposal must satisfy the conditions that are integral elements of the classes of actions in Appendix B of both 10 CFR Part 1021 and DOE's NEPA Implementing Procedures.

- 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.

- A portion of the proposed action is categorically excluded from further NEPA review. The NEPA Provision identifies Topic Areas, Budget Periods, tasks, and/or subtasks that are subject to additional NEPA review.

NEPA PROVISION

DOE has made a conditional NEPA determination.

The NEPA Determination applies to the following Topic Areas, Budget Periods, and/or tasks:

- Tasks 1 through 5
- Task 8

The NEPA Determination does not apply to the following Topic Area, Budget Periods, and/or tasks:

- Tasks 6 through 7
- Task 9

Notes:

Water Power Technologies Office
NEPA review completed by Chris Akios, 12/19/2025

SIGNATURE OF THIS MEMORANDUM CONSTITUTES A RECORD OF THIS DECISION.

NEPA Compliance Officer Signature: _____

 Electronically
Signed By: Nicole Serio

NEPA Compliance Officer

Date: 12/29/2025

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: _____

Field Office Manager

Date: _____