

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



RECIPIENT: Florida Atlantic University

STATE: FL

PROJECT TITLE: Research, Development and Education to Accelerate the Transition of Marine Energy Technologies to Market

Funding Opportunity Announcement Number	Procurement Instrument Number	NEPA Control Number	CID Number
N/A	DE-EE0011382	GFO-0011382-001	GO11382

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.

Rationale for determination:

The U.S. Department of Energy (DOE) is proposing to provide funding to Florida Atlantic University (FAU) to support operations at the Southeast National Marine Renewable Energy Center (SNMREC). The DOE Water Power Technologies Office (WPTO) previously provided funding support for the establishment of four National Marine Energy Centers (NMECs) to increase marine energy research and development and bolster testing infrastructure. The SNMREC is one of the four NMECs established under the program.

Tasks would be completed over a 48-month budget period. Proposed project activities would include marine energy short course development and implementation, NMEC strategy development and implementation, research and development (R&D) to support marine energy industry advancement, and improvements to SNMREC infrastructure. Most desktop planning, design, analysis, and project management would occur at the FAU Boca Raton campus (FL).

This ND applies only to Tasks 1-6 (all Subtasks), Subtasks 7.1, 7.3., and 7.4, Task 8 (all Subtasks), Subtasks 9.1 and 9.4-9.7, and Task 10 (all Subtasks). DOE would complete the NEPA review for Subtasks 7.2 (Field collection of phase-resolved wave data), 9.2 (Drone surveys of sea turtle species at potential tidal energy sites), and 9.3 (Tag-based assessment of sea turtle diving and swimming behaviors) when sufficient information is available to conduct a meaningful review.

Tasks 1-4 would include the development and implementation of marine energy short courses, special topic short courses, marine energy special topic workshops, and a strategic vision for SNMREC. These activities would be

completed in coordination with other NMECs. All activities in Tasks 1 through 4 would be intellectual, academic, or analytical in nature.

Task 5 would include quantification of the U.S.'s ocean current resource and development of ocean current prediction tools. Development of the numerical model-based ocean current resource assessment would occur at Georgia Tech in Atlanta, GA.

Task 6 would include the design, modeling and optimization, and feasibility analysis of a mid-scale Ocean Thermal Energy Conversion (OTEC) system. These activities would occur at PCCI, Inc. in Alexandria, MD and the University of Massachusetts in Amherst, MA.

Subtasks 7.1, 7.3, and 7.4 would include development of a numerical methodology to issue short-term wave and current forecasts, numerical simulation of floating marine energy devices, and demonstration of an active control system in the laboratory. Numerical studies, wave-flume experiments, and the control research study would be performed at the University of Rhode Island (URI) in Narragansett, RI.

Task 8 would involve the integration of marine energy microgrids with hydrogen generation, including the development of models, development and validation of a hardware-in-the-loop simulation environment, and design of controllers and operations for bulk power systems. These activities would occur at Auburn University in Auburn, AL and the University of Georgia in Athens, GA.

Subtasks 9.1, 9.4, 9.5, 9.6, and 9.7 would involve completion of a desktop literature and fisheries bycatch-based review of sea turtle occurrence at potential marine energy sites, creation of a map of sea turtle densities at potential tidal and ocean current sites, assessment of sea turtle skeleton properties as they relate to collisions with turbine blades, development of sea turtle structural models, and completion of a sea turtle strike assessment. These activities would occur at the FAU Boca Raton campus. FAU is authorized to conduct sea turtle research under a Marine Turtle Permit issued by the Florida Fish and Wildlife Conservation Commission.

Task 10 would involve SNMREC infrastructure improvements and capability enhancements, including procurement and modification of a new rotor testing vessel and procurement and preparation of oceanographic instrumentation for deployment. Microgrid simulator hardware would be acquired and integrated to expand simulation capabilities. Marine animal survey and risk evaluation capabilities would be enhanced by the purchase of an extensometer, sea turtle satellite tags and service, and aerial animal survey drones. These activities would primarily occur at the FAU HBOI. The URI Department of Ocean Engineering wave-current flume would also be upgraded.

All proposed project work would be performed at existing, purpose-built facilities. No changes to the use, mission, or operation of these facilities, modifications, or ground disturbing activities would be required. No additional permits, licenses, or authorizations would be required.

Proposed activities would involve typical hazards associated with research facilities and the use of fabrication and machining tools and heavy lift equipment. All FAU facilities and laboratories are governed by the FAU Environmental Health and Safety Department. Protocols, training, and oversight are in place, including those for laboratory, chemical, occupational, and electrical safety. Activities at URI would be governed by the URI Environmental Health and Safety Office. All proposed project activities would comply with federal, state, and local environmental regulations.

DOE has considered potential impacts on resources, including those of an ecological, historical, cultural, and socioeconomic nature. DOE does not anticipate adverse impacts on these resources.

NEPA PROVISION

DOE has made a conditional NEPA determination.

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

Tasks 1-6 (all Subtasks)
Subtasks 7.1, 7.3., and 7.4
Task 8 (all Subtasks)
Subtasks 9.1 and 9.4-9.7
Task 10 (all Subtasks)

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

Subtask 7.2
Subtasks 9.2 and 9.3

Notes:

Water Power Technologies Office (WPTO)
NEPA review completed by Melissa Parker, 06/06/24

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.

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.

SIGNATURE OF THIS MEMORANDUM CONSTITUTES A RECORD OF THIS DECISION.

NEPA Compliance Officer Signature:  _____ Date: 6/7/2024
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