

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



RECIPIENT: University of Hawaii

STATE: HI

PROJECT TITLE : Bipartisan Infrastructure Law DOE (BIL) Funding for the National Marine Energy Centers - Activities at the Hawai'i Marine Energy Center (HMEC)

Funding Opportunity Announcement Number	Procurement Instrument Number	NEPA Control Number	CID Number
N/A	DE-EE0011380	GFO-0011380-001	GO11380

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 the University of Hawaii (UH) to support operations at the Hawaii Marine Energy Center (HMEC). 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 HMEC is one of the four NMECs established under the program.

Tasks would be completed over a 60-month budget period. Proposed project activities would include marine energy short course development and implementation, HMEC strategy development and implementation, research and development (R&D) to support marine energy industry advancement, and improvements to HMEC infrastructure.

This ND applies only to Tasks 1, 2, and 5 (all Subtasks) and Subtasks 3.1.1-3.1.5, 3.2-3.5, 4.1-4.7, and 4.9-4.11. DOE would complete an additional NEPA review for Subtasks 3.1.6 (Ocean testing of the selected WEC) and 4.8 (Installation of Waverider Buoy near Kilo Nalu) when sufficient information is available to conduct a meaningful review.

Tasks 1 and 2 would include the development and implementation of marine energy short courses and a strategic vision for HMEC. These activities would be completed in coordination with other NMECs. Task 5 would involve program performance reviews. All activities in Tasks 1, 2, and 5 would be intellectual, academic, or analytical in nature.

Subtasks 3.1.1-3.1.5 would include literature reviews, numerical simulation and hardware integration for wave energy

converter (WEC) control, modeling, and power takeoff (PTO) system bench testing. Williwaw Engineering (Newport, OR) would provide electrical engineering support for these subtasks.

Subtask 3.2 would include linear and nonlinear modeling of waves and soils, parametric studies, and preliminary design of flume experiments. Subtask 3.3 would include conducting a climate cycle analysis for monthly to seasonal wave forecasting. Subtask 3.4 would include non-hydrostatic modeling to assess far-field impacts of WECs. Subtask 3.5 would include the optimization of hydraulic characteristics in pumped storage application implemented in an oscillating surge WEC. This would include design, fabrication, and bench testing of a high-flow pump.

Task 4.0 would involve infrastructure and test facility improvements at UH. These activities would include procurement and installation of force sensors and a motion tracking system for an existing wave flume, an acoustic navigation package for an existing remotely operated vehicle, a navigation system, a boat davit, and a replacement outboard motor for an existing UH workboat, and procurement of a Waverider buoy to be used for future data collection at Kilo Nalu Observatory. Deployment of the Waverider buoy (Subtask 4.8) is not covered under this ND. Additional Task 4.0 activities would include procurement and installation of upgrades to the HMEC WEC Hydraulics laboratory, procurement and set up of National Renewable Energy Laboratory's MODAQ M2 data acquisition system, and the purchase of wave spotter buoys.

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

Proposed activities would involve typical hazards associated with research facilities, including pressurized fluids, electric shock, and moving parts during testing and equipment installations. All work would be completed under existing UH safety guidelines administered by the UH 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 and 2 (all Subtasks)
Subtasks 3.1.1-3.1.5 and 3.2-3.5
Subtasks 4.1-4.7 and 4.9-4.11
Task 5 (all Subtasks)

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

Subtask 3.1.6
Subtask 4.8

Notes:

Water Power Technologies Office (WPTO)
NEPA review completed by Melissa Parker, 06/25/24

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:  **Electronically Signed By: Andrew Montano** Date: **6/26/2024**
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