

PMC-ND
(1.08.09.13)

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



RECIPIENT: University of Hawaii

STATE: HI

PROJECT TITLE: WAVE FOCUSING ENERGY CONVERTER

Funding Opportunity Announcement Number	Procurement Instrument Number	NEPA Control Number	CID Number
DE-FOA-0001837	DE-EE0008629	GFO-0008629-002	G08629

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.)
- 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 (UofH) to design, fabricate, and test a novel wave energy converter (WEC) device. The device would be developed so as to readily incorporate a commercially available hydro turbine into a novel WEC configuration. Small and medium-scale prototype devices would be developed and tested both in near-shore ocean waters and at dedicated wave tank testing facilities.

A NEPA Determination (GFO-0008629-001; CX: A9) was completed for select activities associated with this award on 8/19/2019. However, since that time, the scope of the project has been fully revised, all activities have been substantially modified, and thus the original NEPA determination is no longer pertinent. Accordingly, this NEPA Determination will serve as a review of the revised scope of project activities. Only Tasks 0, 1 and Subtasks 2.1 – 2.4 will be reviewed, as all following task work would include testing (in-ocean and laboratory testing) to be performed at undetermined site locations. Site selection would occur based on the results of the activities performed in Tasks 0, 1 and Subtask 2.1. Subtask 2.5 and Tasks 3 - 9 are restricted until site selections are made, testing plans are developed, and all relevant information is submitted to DOE for review.

Task 0 is an ongoing task throughout the life of the project consisting of project management related activities. This task would also include the development of a project management plan.

Task 1 would consist of computer modeling for design development and system performance simulations. All research performed as part of this task would be computer-based and would not include any physical testing of devices. UofH would perform this task work in coordination with project partners at the National Renewable Energy Laboratory (Golden, CO).

Subtask 2.1 would consist of the development of a testing plan for near-shore ocean testing of a small-scale prototype WEC device. The testing plan would outline device specifications, testing parameters, and specify a site location(s) for testing. The testing plan would then be submitted to DOE for review.

Subtask 2.2 would consist of component development and preparation of design drawings. A specialized flap would be designed for incorporation into the WEC device. Computer based design and analysis would be performed to develop the specifications for the flap and associated parts.

Subtask 2.3 would consist of parts/materials procurement and device assembly. Off-the-shelf hardware and customized components required to assemble the small-scale WEC device would be procured. Custom components, including the flap and associated parts, would be fabricated by a qualified third party manufacturer. The small-scale device would measure approximately 1m x 1m. Component assembly would be performed by UofH at its campus in Honolulu, HI.

Subtask 2.4 would consist of bench-scale laboratory testing of WEC hydraulic system components. System components, including a hydraulic cylinder and linear actuator would be used for verification testing of the computer models developed as part of Task 1. Component testing would consist solely of laboratory based equipment validation. No in-water tank testing or field testing would be performed. All laboratory testing would be performed by UofH at its campus in Honolulu, HI.

Project activities occurring as part of the above tasks/subtasks would largely consist of office-based work. No ground disturbing activities, facility modifications, or changes to the use, mission, or operation of existing facilities would be required. No additional permits or authorizations would be required. Device assembly and laboratory testing would be performed at existing, purpose-built laboratory facilities. Project personnel would adhere to UofH's established health and safety policies and procedures. UofH would observe all applicable Federal, state, and local health, safety, and environmental regulations when performing project work.

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 conditional NEPA determination.

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

Task 0
Task 1
Subtasks 2.1 - 2.4

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

Subtask 2.5
Tasks 3 - 9

Notes:

Water Power Technologies Office
This NEPA determination requires a tailored NEPA Provision.
NEPA review completed by Jonathan Hartman, 11/03/2020

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: **Roak Parker**

NEPA Compliance Officer

Date: 11/4/2020

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: _____