PMC-ND
(1.08.09.13)

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

RECIPIENT: University of Hawaii at Manoa **STATE:** HI

PROJECT TITLE: HAWAII WAVE SURGE ENERGY CONVERTER (HAWSEC)

Funding Opportunity Announcement Number	Procurement Instrument Number	NEPA Control Number	CID Number
DE-FOA-0001837	DE-EE0008629	GFO-0008629-003	GO8629

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 (UH) 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. The small scale device would contain a generator, approximately 1 meter cubed in size and which would remain out of the water, and an approximate 1 meter by 1 meter flap with hydraulics that would be placed in the water. Components would be made from metals, plastics, fiberglass, as well as off the shelf sensor and electronic components.

The proposed project would have two Budget Periods. Two previous NEPA determinations were completed reviewing Tasks 0, 1 and Subtasks 2.1 – 2.4 in Budget Period 1 (GFO-0008629-001; CX: A9; 8/19/2019 and GFO-0008629.002;CX A9, B3.6 11/04/2020) This review is for the remaining Budget Period 1 tasks; Subtask 2.5 as well as Tasks 3-5.

In Subtask 2.5 UH would test the device in the nearshore environment off the Makai Research Pier in Oahu, Hawaii. Testing would occur in shallow waters (less than 6 feet deep). Test devices would be deployed from shore or the pier in the morning, testing would occur in the afternoon, and the device would be removed from the water at the end of the day. Multiple days of testing would occur.
There are numerous Endangered Species Act listed marine species (listed species) which could occur at proposed project field testing site. These include Hawaiian monk seal, Green, Hawksbill, Leatherback, Loggerhead, and Olive Ridley Sea Turtles, as well as numerous species of whale. Large marine mammals (e.g. whales) would not be expected in the proposed project area since testing will be conducted in shallow waters. However, turtles and Hawaiian monk seal could be possible in the project area. DOE contacted the National Marine Fisheries Service (NMFS) to discuss the proposed field testing. After describing the proposed testing, the devices, proposed testing locations, and water depth, NMFS advices that they were not concerned about the testing having any effect on listed species as long as UH maintained observers, stayed in shallow waters, stayed on sandy locations, and delayed or halted testing if listed species were or became present. Constant vigilance would be kept for the presence of ESA-listed marine species during all aspects of the proposed field testing. As such, DOE has determined that the proposed testing will have no effect on listed species as long as UH complies with the Best Management Practices (BMP) identified by NMFS.

These BMPs will be required as part of the terms and conditions of the DOE grant and are listed below:
1. All work shall occur in the immediate vicinity of, and adjacent to, Makai Research Pier. All in water work must be conducted in shallow water (no deeper than 6 feet) beside the pier. Work shall not extend out beyond the pier. All work shall be conducted in the sandy area along side of the pier with all devices placed on sand. No devices shall be placed on rock or reef areas.
2. The project manager shall designate at least two competent observers to survey the areas of proposed field testing for ESA-listed marine species and marine mammals. Observers shall remain on Makai Pier during the entire testing period and shall conduct observation during all phases of the proposed testing, including deployment, testing, and removal.
3. All in-water work shall be postponed or halted when ESA-listed marine species are within 50 meters of the proposed testing site, and shall only begin/resume after the animals have voluntarily departed the area and 30 minutes additional time has passed. Any equipment which could interact with a listed species that has entered the proposed project area must be removed until the species has left the proposed project area and 30 minutes additional time has passed, unless, in the best judgment of the project manager, to remove the equipment would further endanger the listed species.
4. Work may not be conducted if a Hawaiian monk seal or sea turtle is on shore within 50 meters of the proposed testing site. All personnel will stay more than 50 meters from Hawaiian monk seals and sea turtles that haul out on the beach. Work may only be conducted after the seal or turtle has voluntarily left the area and 30 minutes additional time has passed.
5. Personnel will not perform work if turtle nesting is known or suspected to be within 50 meters of the proposed testing site.
6. Observers must verify that no ESA-listed marine animals are in the area where equipment or material is expected to contact the substrate (ocean floor) before that equipment/material may enter the water.
7. All deployment and removal of equipment shall occur from shore or from the pier. Ocean vessels (boats) shall not be used during the proposed field testing.
8. All objects will be lowered to the bottom (or installed) in a controlled manner.
9. In-water tethers, mooring lines, or any other lines or cables shall be kept to the minimum lengths necessary, and shall remain deployed only as long as needed to properly accomplish the required task.
10. All project-related materials and equipment placed in the water shall be free of pollutants.
11. All vehicles accessing the project area are must have rubber-wheeled and remain on existing access roads or parking areas.
12. All aspects of the project must comply with all Best Management Practices recommended by the National Marine Fisheries Service.

In Task 3 UH would conduct tank testing of the device. Tank testing would occur at Oregon State University, Hinsdale testing facility, or the University of Maine wave tank test facility, or another University tank testing facility that regularly engages in testing of this type.

In Tasks 4 and 5 UH would analyze data, conduct post testing numerical modeling, and would develop additional computer models and designs of the device based on results obtained from testing. All work in these task would be limited to information gathering and analysis, including computer model and design, and would occur at the campus of UH, in Oahu, Hawaii.

Field work would necessarily involve working in an open ocean environment. All workers would follow UH health and safety practices, and would wear appropriate protective equipment, including water shoes and personal floatation devices when necessary. Work at the university testing tanks would include work in a water environment and work utilizing large equipment. Pre-existing university health and safety procedures would be followed.

NEPA PROVISION

DOE has made a conditional NEPA determination.

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

All Budget Period 1 tasks

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

All Budget Period2 tasks

Include the following condition in the financial assisstance agreement:

Constant vigilance must be kept for the presence of ESA-listed marine species during all aspects of the proposed field testing. The following Best Management Practices are required during field work.

1. All work shall occur in the immediate vicinity of, and adjacent to, Makai Research Pier. All in water work must be conducted in shallow water (no deeper than 6 feet) beside the pier. Work shall not extend out beyond the pier. All work shall be conducted in the sandy area along side of the pier with all devices placed on sand. No devices shall be placed on rock or reef areas.
2. The project manager shall designate at least two competent observers to survey the areas of proposed field testing for ESA-listed marine species and marine mammals. Observers shall remain on Makai Pier during the entire testing period and shall conduct observation during all phases of the proposed testing, including deployment, testing, and removal.
3. All in-water work shall be postponed or halted when ESA-listed marine species are within 50 meters of the proposed testing site, and shall only begin/resume after the animals have voluntarily departed the area and 30 minutes additional time has passed. Any equipment which could interact with a listed species that has entered the proposed project area must be removed until the species has left the proposed project area and 30 minutes additional time has passed, unless, in the best judgment of the project manager, to remove the equipment would further endanger the listed species.
4. Work may not be conducted if a Hawaiian monk seal or sea turtle is on shore within 50 meters of the proposed testing site. All personnel will stay more than 50 meters from Hawaiian monk seals and sea turtles that haul out on the beach. Work may only be conducted after the seal or turtle has voluntarily left the area and 30 minutes additional time has passed.
5. Personnel will not perform work if turtle nesting is known or suspected to be within 50 meters of the proposed testing site.
6. Observers must verify that no ESA-listed marine animals are in the area where equipment or material is expected to contact the substrate (ocean floor) before that equipment/material may enter the water.
7. All deployment and removal of equipment shall occur from shore or from the pier. Ocean vessels (boats) shall not be used during the proposed field testing.
8. All objects will be lowered to the bottom (or installed) in a controlled manner.
9. In-water tethers, mooring lines, or any other lines or cables shall be kept to the minimum lengths necessary, and shall remain deployed only as long as needed to properly accomplish the required task.
10. All project-related materials and equipment placed in the water shall be free of pollutants.
11. All vehicles accessing the project area are must have rubber-wheeled and remain on existing access roads or parking areas.
12. All aspects of the project must comply with all Best Management Practices recommended by the National Marine Fisheries Service.

Notes:

Water Power Technologies Office
This NEPA determination does require a tailored NEPA provision.
Review completed by Roak Parker, 08/03/2021

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 Date: 8/3/2021

NEPA Compliance Officer

FIELD OFFICE MANAGER DETERMINATION

- [x] 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