

PMC-ND

(1.08.09.13)

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

**RECIPIENT:** Monterey Bay Aquarium Research Institute (MBARI)**STATE:** CA**PROJECT TITLE:** Open Wave-Energy Control System Development Platform

Funding Opportunity Announcement Number	Procurement Instrument Number	NEPA Control Number	CID Number
DE-FOA-0002234	DE-EE0009444	GFO-0009444-001	GO9444

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 Monterey Bay Aquarium Research Institute (MBARI) to build upon an existing wave energy converter (WEC) and ROS (Robot Operating System) to create an open wave energy research platform to broaden the availability of real-world WEC testing opportunities. The project would be completed over two Budget Periods (BPs) with a Go/No-Go decision point between each BP. This NEPA determination only applies to BP1, tasks 1-6 and 9-11.

Proposed project activities included in this NEPA review would consist of software development, creation and beta testing of a wave-energy simulation tool, website design and development, outreach, and training potential users on the use of the simulation tool. MBARI would oversee the project and perform software development and testing and preparation of the buoy for deployment. Open Robotics in Mountain View, CA would assist in software development.

In tasks 1 and 2, MBARI and Open Robotics would develop and integrate an ROS software interface into the MBARI WEC hardware. A wave-energy simulation tool would then be developed and integrated into the ROS software and would be tested for functionality.

In tasks 3 to 6, MBARI would test and refine the simulation software. The wave-energy simulation software would be made available to prospective users, a beta group, through a website that would provide access to simulation tools, example controllers, and opportunities for collaboration. A webinar as well as tutorial would also be presented to potential users to train them on the use of the developed simulation tool.

In task 7, MBARI would field test the buoy in the Monterey Bay. In task 8, MBARI would provide support for the field testing. Field testing has the potential to impact marine species, including Endangered Species Act listed species. Prior to review of these tasks, MBARI will need to prepare supporting information regarding environmental impacts, including any potential impacts to Endangered Species Act listed species, Essential Fish Habitat, and Marine Mammals, so that DOE can meaningfully evaluate those impacts and engage in consultation as necessary. As such, tasks 7 and 8 are restricted until further NEPA review.

In task 9, MBARI would engage in marketing and outreach to prospective users.

In task 10, MBARI would continue to provide technical support for the online tool as well as offer user support.

In task 11, MBARI would prepare and submit materials to DOE for a Go/No-Go review.

Like tasks 7 and 8, tasks in BP2 would include field testing and therefore cannot be reviewed at this time. MBARI will need to prepare supporting information, as identified above, prior to any additional NEPA review.

No changes in the use, mission, or operation of existing facilities would be required as part of this project and no additional permits would be required in order to conduct any of the work activities.

Project activities would involve the use and installation of hardware and software into the MBARI wave-energy converter which includes un-exposed hazardous voltages. Risks associated with the handling of this device would be mitigated through adherence to existing MBARI safety standards. MBARI and its project partners would observe all applicable Federal, state, and local health, safety, and environmental regulations.

NEPA PROVISION

DOE has made a conditional NEPA determination.

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

Budget Period 1

- Task 1: ROS integration into buoy controller
- Task 2: Integrate wave-energy simulator into ROS environment
- Task 3: Publish Simulated Environment
- Task 4: Port existing MBARI control features to new ROS system
- Task 5: Develop portal for user access/outreach
- Task 6: Launch of simulation capabilities to beta group
- Task 9: Marketing and outreach (Budget Period 1)
- Task 10: Support of simulation capabilities (Budget Period 1)
- Task 11: Go/No-Go Review; Continuation into Budget Period 2

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

Budget Period 1

- Task 7: Buoy deployment, maintenance, and recovery #1
- Task 8: Support of on-buoy operations for beta group

Budget Period 2

All tasks

Notes:

Water Power Technologies Office

This NEPA determination does require a tailored NEPA provision.

Review completed by Shaina Aguilar on 8/18/21.

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:  Roak Parker Date: 8/19/2021
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