

PMC-ND  
(1.08.09.13)

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



**RECIPIENT:** California Wave Power Technologies, LLC

**STATE:** CA

**PROJECT TITLE :** CWPT Open Water Demonstration

<b>Funding Opportunity Announcement Number</b>	<b>Procurement Instrument Number</b>	<b>NEPA Control Number</b>	<b>CID Number</b>
DE-FOA-0001663	DE0008097.0000	GFO-0008097-001	

**Based on my review of the information concerning the proposed action, as NEPA Compliance Officer (authorized under DOE Order 451.1A), I have made the following determination:**

**CX, EA, EIS APPENDIX AND NUMBER:**

Description:

<b>A9 Information gathering, analysis, and dissemination</b>	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.)
<b>B3.6 Small-scale research and development, laboratory operations, and pilot projects</b>	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 California Wave Power Technologies, LLC (CalWave) to design, fabricate, conduct laboratory testing, and then field test in an ocean environment a 1:6 scale Wave Energy Conversion device (WEC).

The proposed project is divided into 2 Budget Periods (BP) with a total of 10 tasks. Tasks 1-6 would occur in BP1, Tasks 7-10 would occur in BP2. This NEPA review is for BP1 tasks only.

Task 1 would consist of systems design work and development of a risk management plan.

Task 2 would consist of numerical modeling and design work for controls development. Numerical modeling would occur at CalWave as well as at the National Renewable Energy Lab in Golden, Colorado. In task 2 CalWave would also test their existing 1:20 scale WEC in a wave tank. The 1:20 scale WEC was previously fabricated and tested as part of the DOE Wave Energy Prize. The device would be tested at the University of Maine wave tank testing facility where data would be gathered regarding controls and load management mechanisms. Task 2 would also include analysis of the results from the testing.

In task 3 CalWave would fabricate and bench test three components of the WEC device (subtasks 3.1, 3.2, and 3.3). In subtask 3.1 CalWave would fabricate and test a Power Take-Off/Power Conversion Chain (PTO/PCC). The component would consist of a hydraulic cylinder mounted within a housing. The component would be made from metal, rubber, plastics and oils. This component would be fabricated by CalWave at their existing facility. This component would be approximately 1.5 meters by 1 meter by 0.5 meters in size. The component would be tested to insure functionality at the University of California Berkeley civil engineering lab.

In subtask 3.2 CalWave would fabricate and test a mooring winch. This would be fabricated by CalWave and would include an electric motor, gear train, housing, bearings, brake, and cable or rope line. This component would be approximately 1 meter by 0.5 meters by 0.5 meters in size. The winch would be tested by CalWave at their facility to confirm the strength and speed of the winch.

In subtask 3.3 CalWave would fabricate and test a load management mechanism. This would include a load absorber, an actuator, mounts, guides, and rails. The component would be fabricated from metals, plastics, rubber and grease. This component would be fabricated by CalWave at their existing facility. This component would be approximately 2



meters by 1 meter by 0.5 meters in size. The component would be tested to insure functionality at CalWave.

Tasks 4, 5 and 6 would consist of development of a fabrication plan, test plan and permitting plan. These tasks would consist of information gathering and analysis.

No modifications to existing facilities or new permits would be required for any of the proposed work in BP1. No hazardous materials would be used in BP1. All waste generated during Task 3 fabrication and testing would be recycled or disposed of appropriately.

Any work proposed to be conducted at a DOE laboratory may be subject to additional NEPA review by the cognizant DOE NEPA Compliance Officer for the specific DOE laboratory prior to initiating such work. Further, any work conducted at a DOE laboratory must meet the laboratory's health and safety requirements.

Based on the review of the proposal, DOE has determined that activities associated with BP1 of the proposal fit within the class of action(s) and the integral elements of Appendix B to Subpart D of 10 CFR 1021 outlined in the DOE categorical exclusion(s) selected above. DOE has also determined that: (1) there are no extraordinary circumstances (as defined by 10 CFR 1021.410(2)) related to the proposal that may affect the significance of the environmental effects of the proposal; (2) the proposal has not been segmented to meet the definition of a categorical exclusion; and (3) the proposal is not connected to other actions with potentially significant impacts, related to other proposals with cumulatively significant actions, or an improper interim action. All activities associated with BP1 of this proposal are categorically excluded from further NEPA review.

#### NEPA PROVISION

DOE has made a conditional NEPA determination for this award, and funding for certain tasks under this award is contingent upon the final NEPA determination.

Insert the following language in the award:

You are restricted from taking any action using federal funds, which would have an adverse affect on the environment or limit the choice of reasonable alternatives prior to DOE/NNSA providing either a NEPA clearance or a final NEPA decision regarding the project.

Prohibited actions include:

All BP2 Tasks

Task 7: Deployment Preparation

Task 8: Deployment

Task 9: Device Testing

Task 10: Recovery, Decommissioning, Post-Processing, and Reporting

This restriction does not preclude you from:

All BP1 Tasks

Task 1: Develop WEC Systems Design

Task 2: Numerical Modeling, Controls Development, and Implementation

Task 3: Subsystems Lab Testing and De-Risking

Task 4: System Fabrication Plan

Task 5: Preliminary IO&M and Teat Plan

Task 6: Open Water Site and Permitting Plan

If you move forward with activities that are not authorized for federal funding by the DOE Contracting Officer in advance of the final NEPA decision, you are doing so at risk of not receiving federal funding and such costs may not be recognized as allowable cost share.

Insert the following language in the award:

You are required to:

Any work proposed to be conducted at a DOE laboratory may be subject to additional NEPA review by the cognizant DOE NEPA Compliance Officer for the specific DOE laboratory prior to initiating such work. Further, any work conducted at a DOE laboratory must meet the laboratory's health and safety requirements.

Note to Specialist :

This NEPA determination does require a tailored NEPA provision

Water Power Program

NEPA determination completed by Roak Parker 8/16/17

**SIGNATURE OF THIS MEMORANDUM CONSTITUTES A RECORD OF THIS DECISION.**

NEPA Compliance Officer Signature:   
NEPA Compliance Officer

Date: 8/16/2017

**FIELD OFFICE MANAGER DETERMINATION**

Field Office Manager review required

**NCO REQUESTS THE FIELD OFFICE MANAGER REVIEW FOR THE FOLLOWING REASON:**

- Proposed action fits within a categorical exclusion but involves a high profile or controversial issue that warrants Field Office Manager's attention.
- Proposed action falls within an EA or EIS category and therefore requires Field Office Manager's review and determination.

**BASED ON MY REVIEW I CONCUR WITH THE DETERMINATION OF THE NCO :**

Field Office Manager's Signature: \_\_\_\_\_  
Field Office Manager

Date: \_\_\_\_\_