

PMC-ND  
(1.08.09.13)

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



**RECIPIENT:** Columbia Power Technologies, Inc.

**STATE:** VA

**PROJECT TITLE:** Design, build, and test of novel, remote, low-power wave energy converter for non-grid applications

<b>Funding Opportunity Announcement Number</b>	<b>Procurement Instrument Number</b>	<b>NEPA Control Number</b>	<b>CID Number</b>
DE-FOA-0001837	DE-EE0008627	GFO-0008627-002	G08627

**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 Columbia Power Technologies, Inc. (CPT) to design, develop, and test a novel low-power wave-energy-converter (WEC). The project would gather system requirements, determine potential energy storage technologies for integration into the WEC, and build on previous research to develop systems and sub-systems. A prototype WEC (previously determined to be the dataRay, but now modified to be the SeaRAY) would be fabricated and tested in open-water to validate its performance. Open water testing was originally proposed for the PacWave North site off the coast of Newport Oregon. Open Testing is now proposed for the Kaneohe Bay site off the island of Oahu. The project would be completed over two Budget Periods (BPs), with a Go/No-Go Decision Point in between each BP.

DOE completed one previous NEPA determination covering BP1 (Tasks 1-7). (GFO-0008627.001; CX A9, B3.6; 04/29/2019). This NEPA determination is for BP 2, Tasks 8 – 14. BP 2 Tasks 15 -17 would include the proposed deployment and open water testing of the WEC. There is not enough information available at this time to evaluate those tasks. CPT will need to prepare a Biological Evaluation and DOE will need to complete a consultation with National Marine Fisheries Service before those activities can be meaningfully reviewed. As such, those tasks remain restricted.

Tasks 8 – 10 include developing final plans and completing permitting for the proposed in water testing. This could include developing the Project Management Plan, Risk Register, Verification and Validation Plan, SCADA Plan, IO&M Plan, Test Plan, as well as completing the Biological Evaluation necessary for consultation. All activities in Tasks 8-10 are limited to data gathering and analysis.

Tasks 11 and 12 would include procurement, fabrication and assembly of the SeaRAY. The SeaRAY would contain the following primary components: a nacelle, a PTO located within the nacelle, forward and aft floats, a heave plate, a single power cable, a garage that would rest on the ocean floor, and lithium batteries located within the garage. The nacelle and floats would float on the surface of the water, the heave plate would be located in the water column beneath the nacelle, and the garage would rest on the ocean floor. The power cable would connect the nacelle and PTO to the batteries in the garage. The nacelle and floats each would be approximately 17 feet in length and 4 feet around and would be fabricated from 9 tons of steel. The PTO would be fabricated from approximately 2 tons of steel. The garage, which would act as an anchor for the system, would be fabricated from approximately 6 tons of steel and would contain approximately 1,600 pounds of batteries. The components (PTO and nacelle) would also contain a

variety of electro-mechanical parts.

All component would be manufactured by a pre-existing commercial fabrication facility (such as a ship building facility) that regularly engages in fabrication of this type. Components would also be assembled at the facility and then placed into shipping containers for transport. The facility would follow all existing corporate health and safety practices, and would comply with all local, state and Federal regulations.

In Task 13 the PTO would be shipped to the National Renewable Energy Laboratory (NREL) in Golden, Colorado for bench testing. Testing would include dynamometer bench testing with a pre-existing dynamometer. Bench testing at NREL would follow all preexisting health and safety procedures. After testing the PTO would be reunited with the remainder of the WEC components for assembly and shipping.

In Task 14 the containerized SeaRAY would be transported to a departure port, loaded onto a commercial shipping vessel, and shipped via commercial ocean transport to Honolulu Hawaii.

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:

Budget Period 1:  
All Tasks

Budget Period 2:  
Task 8: BP2 Planning  
Task 9: Assembly & Test Plan Development  
Task 10: Permitting  
Task 11: Procurement  
Task 12: Conduct Final Assembly  
Task 13: Verification and Validation (V&V)  
Task 14: Transport WEC

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

Budget Period 2:  
Task 15: Deploy and test WEC  
Task 16: Recover and decommission WEC  
Task 17: BP2/Closeout reporting

Notes:

Water Power Technologies Office  
This NEPA determination does require a tailored NEPA provision.  
Review completed by Roak Parker, 09/29/2020

## 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**

Date: 9/29/2020

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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:

\_\_\_\_\_  
Field Office Manager

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