

PMC-ND

(1.08.09.13)

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



RECIPIENT: Northwest Energy Innovations, LLC

STATE: OR

PROJECT TITLE: Azura Demonstration at the Navy's Wave Energy Test Site

Funding Opportunity Announcement Number
DE-FOA-0001081

Procurement Instrument Number
DE-EE0006923

NEPA Control Number
GFO-0006923-001

CID Number

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:

- 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 federal funding to Northwest Energy Innovations, LLC (NWEI) to design, fabricate, deploy, and test a commercial-scale Azura wave energy device (WEC) for comparison of performance, reliability, and levelized cost of energy (LCOE). The expected outcome of the project is to demonstrate that the WEC can achieve a sufficient level of Net Annual Energy Production (AEP) at a capital cost (CAPEX) and operating cost (OPEX) demonstrating that wave energy can be commercially viable.

The proposed project activities would include design, fabrication, deployment, and testing of a commercial-scale Azura wave energy device at the Navy's Wave Energy Test Site (WETS) located at the Marine Corps Base Hawaii (MCBH), Kaneohe Site Bay in Hawaii. NWEI's Statement of Project Objectives (SOPO) details 10 tasks which would be separated into three Budget Periods (BPI, BPII and BPIII). BPI spans months 1-15 and generally includes the permitting and planning, wave tank testing, performance analysis, LCOE modeling, and design tasks; BPII would span months 16-21 and would generally include additional permitting and planning, additional LCOE review, final designs, and design review. BPIII would span months 22-51 and would generally include fabrication, installation, testing, decommissioning, data archiving, and final LCOE analysis. This NEPA review is limited to those tasks in BPI and BPII. Information necessary for the completion of a NEPA review for BPIII activities would only be finalized and defined upon completion of BPI and BPII activities. When these details are defined all tasks in BPIII will be subject to additional NEPA review prior to the authorization of federal funds for those tasks.

This NEPA determination will only be applied to Tasks 1-3 and Tasks 9 and 10 as outlined in the SOPO. Task 1 includes fabrication of a 1.5m x 0.5m x 0.5m WEC model weighing no more than 25 kg, and fabricated from metal and plastic, in-house by Oregon State University (OSU). The model will be tank tested at the OSU Tsunami Basin testing facility, which is an existing indoor wave energy testing facility. The remaining tasks involve permitting and planning (Task 2), performance analysis and design (Task 3), LCOE modeling (Task 9), and project management (Task 10). Overall project management and device design would be completed by Northwest Energy Innovations in Portland, Oregon. Modeling and analysis to support design and develop detailed specifications for data management systems and equipment installation would be undertaken at the National Renewable Energy Laboratory (NREL) in Jefferson County, CO. Engineering design and

analysis services to support the design of the device and power take-off would take place at the corporate offices of Callaghan Innovation in Lower Hut, New Zealand, at Energy Hydraulics Limited in New Plymouth, New Zealand, and at Makai Engineering in Kailua, HI. Engineering services to support mooring and umbilical cable design and analysis would be completed by Sound and Sea Technology in Ventura, CA. All proposed activities would take place in existing facilities designed for this type of activities; therefore, no new construction, modifications or new permits, additional licenses and/or authorizations would be necessary. For all work conducted at DOE laboratories, project activities may be subject to additional NEPA review by the cognizant NEPA Compliance Officer for the lab and will be required to meet the labs health and safety requirements.

Based on review of the project information and the above analysis, DOE has determined that Tasks 1-3 and Tasks 9 and 10 of the proposed project would not have a significant individual or cumulative impact to human health and/or environment. DOE has determined that this project is consistent with actions outlined in DOE categorical exclusion A9 "Information gathering, analysis, and dissemination" and B3.6 "small-scale research and development, laboratory operations and pilot projects" and is therefore 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 fabrication, deployment, testing, and/or decommissioning activities as described in Tasks 4-8 in the SOPO.

This restriction does not preclude you from:

Planning and permitting, fabrication of a scale model WEC device, wave tank testing, design, performance analysis, LCOE modeling, and project management/reporting activities as described in Tasks 1-3 and Tasks 9 and 10 in the SOPO.

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.

Note to Specialist :

Water Power Program

This NEPA determination requires a tailored NEPA provision.

Review completed by Rebecca McCord, 05/14/2015

SIGNATURE OF THIS MEMORANDUM CONSTITUTES A RECORD OF THIS DECISION.

NEPA Compliance Officer Signature:



NEPA Compliance Officer

Date:

5/20/2015

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:
