

PMC-EF2a

201002

**U.S. DEPARTMENT OF ENERGY
EERE PROJECT MANAGEMENT CENTER
NEPA DETERMINATION**



RECIPIENT: Northwest Energy Innovations, LLC

STATE: OR

PROJECT TITLE : WET-NZ Multi-Mode Wave Energy Converter Advancement Project

Funding Opportunity Announcement Number	Procurement Instrument Number	NEPA Control Number	CID Number
DE-FOA-0000293	DE-EE0003642	GFO-0003642-001	0

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:

- B3.6** Siting, construction (or modification), operation, and decommissioning of facilities for indoor bench-scale research projects and conventional laboratory operations (for example, preparation of chemical standards and sample analysis); small-scale research and development projects; and small-scale pilot projects (generally less than two years) conducted to verify a concept before demonstration actions. Construction (or modification) will be within or contiguous to an already developed area (where active utilities and currently used roads are readily accessible).
- A9** Information gathering (including, but not limited to, literature surveys, inventories, audits), data analysis (including computer modeling), document preparation (such as conceptual design or feasibility studies, analytical energy supply and demand studies), and dissemination (including, but not limited to, document mailings, publication, and distribution; and classroom training and informational programs), but not including site characterization or environmental monitoring.

Rational for determination:

Northwest Energy Innovations (NWEI), in Portland, Oregon, is proposing to use federal funding to verify the ocean wavelength functionality of the Wave Energy Technology—New Zealand (WET-NZ) device through targeted hydrodynamic testing at wave tank scale and controlled open sea deployment of a ¼ scale (1:4) experimental device. The following review applies only to the development, fabrication and in-door lab testing of the device. All open-sea testing is prohibited until the recipient provides DOE with more information.

- Task 1.0: Wave Tank Testing to Characterize Hydrodynamic Characteristics
- Task 2.0: Open-Sea Testing of a New 1:4 Scale Experimental Model
- Task 2.1: Fabricate a 1:4 Scale Experimental Model
- Task 2.2: Deploy and Test 1:4 Scale Experimental Model
- Task 3.0: Synthesis and Analysis to Demonstrate and Confirm TRL 5/6 Status
- Task 4.0: Market Impact & Competitor Analysis, Business Plan and Commercialization Strategy
- Task 5.0: Project Management and Reporting

All lab work would take place at Oregon State University (OSU) at the O.H. Hinsdale Wave research Laboratory (HWRL) located at 3550 SW Jefferson Way, Corvallis, OR, 97311. The HWRL adheres to the policy guidelines as set forth by the OSU Environmental Health & Safety (EH&S) rules and regulations. An R&D questionnaire addressed the protocols in place regarding laboratory safety, risk management, chemical handling and waste disposal.

The wave tank holds approximately 300,000 gallons of water and its dimensions are 342 ft (l) X 12 ft (w) X 15 ft (d). The wave tank is filled with city tap water. This water is de-chlorinated as required prior to discharge to keep OSU in compliance with state DEQ requirements and the federal Clean Water Act's NPDES permitting requirements. The wave tank is discharged as often as needed for research, testing, education/outreach and maintenance.

Task 1.0 would involve constructing a 1/50 scale model of the WET-NZ device with the anticipation to modify aspects of the basic shape and ability to adjust the center-of-gravity and center-of-buoyancy ratios. The 1/50 scale model would be wave tank tested at OSU's O.H. Hinsdale Wave Research Laboratory. Two test tank trials would take place, separated by analysis of recorded data and modifications to the device and mooring designs.

Task 2.1 would involve fabrication of a ¼ scale model of the WET-NZ device. Task 2.2 would involve open-sea testing of this model. At this time, there is not sufficient information to make a determination on the impacts associated with open-water testing.

Task 3.0 would involve documenting the project results to demonstrate the completion of TRL 5/6 and readiness for

TRL 7/8 as requested in the FOA. Documentation would demonstrate a well-understood and mature design concept. This task would focus on data analysis and document preparation as a result of tests completed in Tasks 1.0 and 2.1.

Task 4.0 would involve developing a market impact and competitor analysis and a business plan and commercialization strategy. Planning and strategic documents and analyses would be the result of this task.

Task 5.0 would involve project management and reporting.

In view of the information provided by the State and the recipient, DOE has determined that the impacts related to Task 1.0-2.1 and 3.0-5.0 are anticipated to have negligible effects on the human and natural environment. Task 1.0-2.1 and 3.0-5.0 are consistent with actions outlined in A9 (information gathering) and B3.6 (indoor bench-scale research) and are, 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:

Task 2.2 - At this time, there is not sufficient information to make a determination on the impacts associated with open-water testing. The recipient shall submit an additional EF-1 when sufficient details are available for DOE to complete the NEPA review for this task.

This restriction does not preclude you from:

- Task 1.0
- Task 2.1
- Task 3.0
- Task 4.0
- Task 5.0

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 :

Cristina Tyler 3.30.2011

SIGNATURE OF THIS MEMORANDUM CONSTITUTES A RECORD OF THIS DECISION.

NEPA Compliance Officer Signature:  Date: 3/30/2011
NEPA Compliance Officer

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: _____ Date: _____