

PMC-EF2a

(2.04.02)

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



RECIPIENT: Principle Power, Inc.

STATE: WA

PROJECT TITLE : WindWaveFloat

Funding Opportunity Announcement Number	Procurement Instrument Number	NEPA Control Number	CID Number
DE-FOA-0000069	DE-EE0002651	GFO-10-204	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:

- 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.
- 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).

Rational for determination:

The objective of this project is to evaluate the technical and economic feasibility of integrating wave energy conversion technology with floating off-shore wind support structures, called the WindWaveFloat (WWF). Principle Power Inc. will investigate multiple wave technologies and develop a wave-wind system design. A scaled prototype will be tested in a wave tank. An economic analysis will be performed to assess the viability of deploying a commercially sized WWF offshore farm of 200 MW capacity. Once the evaluation is complete and a final prototype design is in place, Principal Power Inc. will share knowledge gained from the project with the public. The project will be completed over a two-year period.

Proposed tasks include:

- Task 1 - Management Activities. Manage and coordinate project activities.
- Task 2 - WWF Concept Design. Develop the WWF concept design through power take-off analysis and numerical modeling for validation including lab testing of a scaled model.
- Task 3 - Stability Control System Development. Develop active stability/motion control system for the optimal wind turbine/wave energy generation.
- Task 4 - Physical Models and Wave Tank Testing. Validate the numerical models developed in Task 2 through physical model testing. Concept designs developed in Task 2 will be implemented in a physical model that will be tested at the UC Berkley wave tank.
- Task 5 - WWF Full Scale Integrated System Design. Perform desktop design analysis of a 150 MW WWF farm using the results of Task 2, Task 3, and Task 4.
- Task 6 - Permitting and Grid Integration for One Selected Location. Work with FERC and MMS to determine how to permit a hybrid wind/wave device. Assessment of existing environmental data to determine potential impacts for WWF device. Public meetings and consultations are included in this task. Initiation of permitting activities is limited to analysis of existing data and no field work will be conducted, including no installation of buoys for data collection.
- Task 7 - Levelized Cost of Energy (LCOE) Analysis. Develop energy costs with the goal of achieving the LCOE of under \$0.20/kWh.
- Task 8 - Dissemination Activities. Broadcast the benefits of the technology and knowledge through development of promotional materials and other dissemination actions such as appropriate publications, workshops, and presentations.

This project comprises engineering designs, computer modeling, prototype construction and lab testing, analysis of existing data and agency consultation to determine permitting requirements, and information dissemination; therefore, CX A9 and B3.6 apply.

NEPA PROVISION

DOE has made a final NEPA determination for this award

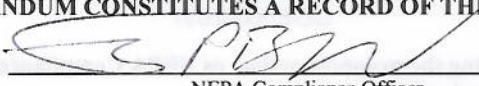
Insert the following language in the award:

Note to Specialist :

None given.

SIGNATURE OF THIS MEMORANDUM CONSTITUTES A RECORD OF THIS DECISION.

NEPA Compliance Officer Signature: _____



NEPA Compliance Officer

Date: _____

3/31/10

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: _____