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



RECIPIENT: Ocean Renewable Power Company, LLC

STATE: AK

PROJECT TITLE : Advanced Energy Harvesting Control Schemes for Marine Renewable Energy Devices

Funding Opportunity Announcement Number	Procurement Instrument Number	NEPA Control Number	CID Number
DE-FOA-0000848	DE-EE0006397	GFO-0006397-002	GO6397

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:

B5.25 Small-scale renewable energy research and development and pilot projects in aquatic environments Small-scale renewable energy research and development projects and small-scale pilot projects located in aquatic environments. Activities would be in accordance with, where applicable, an approved spill prevention, control, and response plan, and would incorporate appropriate control technologies and best management practices. Covered actions would not occur (1) within areas of hazardous natural bottom conditions or (2) within the boundary of an established marine sanctuary or wildlife refuge, a governmentally proposed marine sanctuary or wildlife refuge, or a governmentally recognized area of high biological sensitivity, unless authorized by the agency responsible for such refuge, sanctuary, or area (or after consultation with the responsible agency, if no authorization is required). If the proposed activities would occur outside such refuge, sanctuary, or area and if the activities would have the potential to cause impacts within such refuge, sanctuary, or area, then the responsible agency shall be consulted in order to determine whether authorization is required and whether such activities would have the potential to cause significant impacts on such refuge, sanctuary, or area. Areas of high biological sensitivity include, but are not limited to, areas of known ecological importance, whale and marine mammal mating and calving/pupping areas, and fish and invertebrate spawning and nursery areas recognized as being limited or unique and vulnerable to perturbation; these areas can occur in bays, estuaries, near shore, and far offshore, and may vary seasonally. No permanent facilities or devices would be constructed or installed. Covered actions do not include drilling of resource exploration or extraction wells, use of large-scale vibratory coring techniques, or seismic activities other than passive techniques.

Rationale for determination:

DOE is proposing to provide funding to Ocean Renewable Power Company (ORPC) to investigate, analyze and model advanced turbine control schemes with the objective of increasing the energy produced by hydrokinetic turbines.

A previous NEPA determination was conducted for this project which allowed Tasks 1.0-3.0, 5.0, and 6.0. The remaining tasks involve in-water site characterization and component testing activities associated with ORPC's RivGen turbine, currently in operation in the Kvichak River, Alaska.

This NEPA review is being conducted for Tasks 3.2 and 3.3, which involve site and environmental characterization activities. Task 4.0 involves testing components on the RivGen turbine that would include removal and redeployment of the device. ORPC has not finalized details on these activities; therefore a meaningful NEPA analysis for this task cannot be completed at this time.

Per the current SOPO, project Tasks include:

- Task 1.0 Project Planning
- Task 2.0 Development and Simulation of Control Algorithms
- Task 3.0 Field Campaign for Turbulence Measurements and Turbine Response
 - * Subtask 3.1 Field Campaign Planning
 - * Subtask 3.2 Field Measurements
 - * Subtask 3.3 Data Analysis
- Task 4.0 Control System Implementation and Verification
- Task 5.0 System Refinement and Integration Plan
- Task 6.0 Impact Analysis (reporting)

For task 3.2, ORPC would deploy and operate three Sea Spiders with Acoustic Doppler Current Profilers (ADCPs) and three Tidal Turbulence Moorings with Acoustic Doppler Velocimeters (ADVs), which would characterize inflow conditions around the RivGen device. Data gathered during this task would then be analyzed in task 3.3.

The field instruments would be deployed in an array around ORPC's RivGen device which is currently deployed in the Kvichak River, just outside the community of Iguigig, Alaska. ORPC would utilize DOE funds to conduct two weeks of field measurements. The Sea Spider ADCP would be deployed on the river bottom of the project site and the ADV's would be moored in place up and down river from the RivGen device.

Both the ADCP and ADV devices are considered active acoustic instruments. The operating frequency for the ADCP and ADV are 1 MHz and 6 MHz, respectively. These frequencies are several orders of magnitude higher than the auditory ranges of fish on the Kvichak River and would not likely be detectable by any receptors in the river environment. The US Army Corps contacted the Fish and Wildlife Service (USFWS) as part of their permit process for the RivGen project, per requirements of Section 107 of the Endangered Species Act. The USFWS replied that no threatened or endangered species under the Service's jurisdiction commonly occur in the vicinity of the proposed project.

Activities would take place in navigable waters, but within the project area established by a U.S. Army Corp of Engineers permit (Nationwide Permit #52 issued May 21, 2012) obtained by the Iguigig tribal council and ORPC (within the footprint of the turbine and turbine mooring); which allows deployment of the ORPC device and characterization activities. The Army Corps permit is also in compliance with US Coast Guard regulations for activities within navigational waterways. ORPC would place lighting on all instrumentation, which would further limit any impacts to navigation around the project site.

ORPC and the Iguigig Tribal Counsel have partnered in support of the RivGen demonstration project, which has been funded under an Alaska Energy Authority grant. As the tribal council is a project proponent, no further consultations with the tribe are necessary.

Based on the above information, the short duration of project activities, existing permit requirements, and completion of consultations with other federal and state agencies, DOE has determined that Tasks 3.2 and 3.3 would have no significant impacts on the human or natural environment. These tasks are consistent with actions covered under DOE CX B5.25 (small-scale renewable energy research in aquatic environments); and therefore 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:

Task 4.0 Control System Implementation and Verification

This restriction does not preclude you from:

All activities as described in the following Tasks:

Task 1.0 Project Planning

Task 2.0 Development and Simulation of Control Algorithms

Task 3.0 Field Campaign for Turbulence Measurements and Turbine Response

Task 5.0 System Refinement and Integration Plan

Task 6.0 Impact Analysis

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:

Submit a new EQ1 specific to actions being completed in Task 4.0

Note to Specialist :

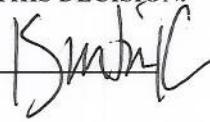
NEPA review completed by Laura Margason on July 16, 2014.

This NEPA Determination requires a tailored NEPA provision.

SIGNATURE OF THIS MEMORANDUM CONSTITUTES A RECORD OF THIS DECISION.

NEPA Compliance Officer Signature: _____

 Electronically
Signed By: Kristin Kerwin
NEPA Compliance Officer



Date: 7/17/2014

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: _____