

PMC-ND

(1.08.09.13)

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

**RECIPIENT:** Re Vision Consulting, LLC**STATE:** CA**PROJECT TITLE:** Development of Optimal Control for three different WEC Devices

Funding Opportunity Announcement Number	Procurement Instrument Number	NEPA Control Number	CID Number
DE-FOA-0001182	DE-EE0007173	GFO-0007173-002	

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:

B3.16 Research activities in aquatic environments Small-scale, temporary surveying, site characterization, and research activities in aquatic environments, limited to: (a) Acquisition of rights-of-way, easements, and temporary use permits; (b) Installation, operation, and removal of passive scientific measurement devices, including, but not limited to, antennae, tide gauges, flow testing equipment for existing wells, weighted hydrophones, salinity measurement devices, and water quality measurement devices; (c) Natural resource inventories, data and sample collection, environmental monitoring, and basic and applied research, excluding (1) large-scale vibratory coring techniques and (2) seismic activities other than passive techniques; and (d) Surveying and mapping. These activities would be conducted in accordance with, where applicable, an approved spill prevention, control, and response plan and would incorporate appropriate control technologies and best management practices. None of the activities listed above would occur 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.

Rationale for determination:

The US Department of Energy (DOE) is proposing to provide federal funding to Re Vision Consulting, LLC (Re Vision), to design, manufacture and test an optimal controls framework that can subsequently be applied to three different wave energy converter devices. Project work would include engineering, design, fabrication, lab testing and wave tank testing, as well as field deployment of measurement buoys in two different locations. DOE previously completed a NEPA review for Tasks 1-4 and Task 7 (GFO-0007173-001 CX A9 and B3.6, 11/17/2015). This NEPA determination applies only to Task 5: Wave Prediction System Development.

In Task 5, Re Vision would validate wave prediction algorithms and real time wave prediction using up to eight wave measurement buoys. Task 5 would involve the deployment of up to 8 buoys in the Pacific Ocean at a location near Santa Cruz, CA. Deployment would include 5 separate deployments of one week each, conducted over a 6 month period. Buoys would be deployed and retrieved from a small vessel. During each deployment buoys would be placed in an area no larger than 2.6 square kilometers and spaced no closer than 50 meters apart. The buoys would be small spherical buoys of 32 centimeter diameter and weighing nine pounds each. The buoys will be affixed to the seafloor using an inverse catenary mooring design that consists of a 11-kilogram Danforth anchor bottom weight, approximately 20 feet of chain attached to the anchor, 5/16th polypropylene line, swivels, and a subsurface float-weight-float using approximately 3 feet of chain attached to the surface buoy. The angle or scope of the mooring system will be minimized such that the tension on the line will be maintained by using the weight of the chain on the bottom to keep the line taut running up to the chain attached to the surface buoy to avoid the formation of a bight or loop in the line.

Re Vision prepared a biological evaluation for DOE, and DOE determined that the proposed project may affect, but is not likely to adversely affect the following species: leatherback sea turtle, humpback whale, blue whale, fin whale, killer whale, gray whale, and Guadalupe fur seal. Further DOE determined that the proposed action may adversely

affect essential fish habitat (EFH), but would not have a substantial adverse impact to EFH. These determinations were made pursuant to the Endangered Species Act and the Magnuson-Stevens Fishery Conservation and Management Act.

On April 14, 2016 DOE initiated informal consultation with the National Marine Fisheries Service (NMFS) regarding the proposed activities and DOE's determinations of affect. On July 21, 2016 NMFS concurred with DOE's determinations regarding affects.

Task 6 (Full Scale Validation) would involve deployment of buoys and testing on a full-scale device in a marine environment. The location of testing has not yet been determined. In addition, biological information regarding the testing location has not been provided to DOE. As such, there is not enough information to review this task at this time.

Based on the review of the proposal, DOE has determined Task 5 of the proposal fits within the class of action(s) and the integral elements of 10 CFR 1021 subpart B outlined in the DOE categorical exclusion(s) selected above. DOE has also determined that: (1) there are no extraordinary circumstances (as defined by 10 CFR 1021.410(2)) related to the proposal that may affect the significance of the environmental effects of the proposal; (2) the proposal has not been segmented to meet the definition of a categorical exclusion; and (3) the proposal is not connected to other actions with potentially significant impacts, related to other proposals with cumulatively significant actions, or an improper interim action. Task 5 of this proposal is 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/NSA providing either a NEPA clearance or a final NEPA decision regarding the project.

Prohibited actions include:

Task 6: Full Scale Validation

This restriction does not preclude you from:

Task 5: Wave Prediction System Development

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 Roak Parker July 26, 2016

SIGNATURE OF THIS MEMORANDUM CONSTITUTES A RECORD OF THIS DECISION.

NEPA Compliance Officer Signature:



Signed By: Kristin Kerwin

Date: 8/2/2016

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: _____