

PMC-ND

(1.08.09.13)

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

**RECIPIENT:** WOODS HOLE OCEANOGRAPHIC INSTITUTION**STATE:** MA

PROJECT TITLE: Improving High Resolution Offshore Wind Resource Assessments and Forecasts using observations in the MA/RI Lease Areas

Funding Opportunity Announcement Number	Procurement Instrument Number	NEPA Control Number	CID Number
DE-FOA-0002236	DE-EE0009424	GFO-0009424-001	

Based on my review of the information concerning the proposed action, as NEPA Compliance Officer (authorized under DOE Policy 451.1), 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 funding to Woods Hole Oceanographic Institution (WHOI) to lead a consortium of partners to improve wind resource assessment and forecast models for offshore wind farms. The proposed project would be divided into four Budget Periods (BPs). These are:

- BP1: Project Planning
- BP 2: Observation and Model Preparations
- BP 3: Field Deployments and Model Development
- BP 4: Analysis, Model Improvement, and Application

This NEPA review is for BP 1 and 2 work only. Work proposed for BP 3 and 4 will be further identified within BP 1 and 2 and thus is not yet well enough defined to complete a NEPA review. All tasks in BP 3 and 4 are thus restricted until further NEPA review.

WHOI will lead a group that includes multiple project partners. Project partners who would perform work on the proposed project include: University of Colorado, Boulder; National Center for Atmospheric Research; Tufts University; University of Texas, Dallas; DNV (multiple office locations), National Oceanic and Atmospheric Administration, National Renewable Energy Lab, and the Bureau of Ocean Energy Management.

Work in BP 1 would be limited to establishing study designs and creation of an advisory board for the proposed research. All work in BP 1 is limited to information gathering and data analysis and would be completed in office buildings or like locations.

Work in BP 2 would involve research design, site selection, as well as some physical model preparation, observation and calibration. Described below are specific Tasks which could include work beyond information gathering and data analysis.

Task 3.1 Land Site Preparation: In this task WHOI will identify specific sites for use in BP 3. While no modifications to sites would be conducted in BP 1 or 2, WHOI would identify and obtain equipment needed for each site as well as obtain necessary permits for proposed BP 3 work.

Task 3.2 Large Barge Preparation: In this task WHOI will begin preparations for lease and use of a large barge to conduct research in BP 3. The barge would be approximately 140 feet long and 40 feet wide. The barge would be anchored in deep water (approximately 60 meters) where it would then collect data. Work in BP 1 and 2, however is limited to research design, and to fabrication of an anchoring system for the barge. The anchor would be a common large anchor fabricated from iron. Fabrication would occur at Schoellhorn-Albrecht Machine Co, in St. Louis, MO, or a similar fabricator who fabricates anchors regularly. The barge and/or anchor would not be deployed in BP 1 and 2.

Task 3.4 Sentinel and WHOI Lidar Buoy Preparation: In this task WHOI would fabricate buoys and lidar for use in BP3. Fabrication of buoys and a buoy lidar system would include purchase of off the shelf components including buoy hulls, instruments, cables, batteries, foam floatation, and radar reflectors, and then assembly of those components into the buoy systems. Assembly would occur at WHOI in pre-existing laboratory and shop facilities. Once assembled, buoy systems would be bench tested at WHOI laboratories to insure that they are functioning correctly. Fully assembled buoys would be approximately 2 meters by 5 meters. The fully assembled lidar buoy would be approximately 3 meters by 4 meters.

Task 3.5 Prepare ASIT/Barge Sensors for Deployment: In this task WHOI would identify and obtain sensors for deployment on the large barge as well as on WHOI's pre-existing Air Sea Interaction Tower (ASIT). Small sensors (up to .5 meters by .25 meters in size) would include common meteorological sensors. Once chosen, sensors would be purchased by WHOI. If necessary, some assembling of sensor components could occur at WHOI laboratory and shop facilities. Testing and calibration of meteorological sensors would occur at WHOI laboratories. WHOI would also identify large sensors for inclusion on the large barge. These could include lidars, radars, and other government furnished equipment. As necessary chosen large sensors would be fabricated at facilities that regularly fabricate such sensors, and then purchased by and shipped to WHOI. Lidar could be calibrated and validated at one of two existing North American validation locations. These are at a met tower facility owned by AWS-Truepower, in Texas, or a tower facility utilized by DNV-GL in Canada. These two facilities regularly validate lidar. Since no barge will be selected until the end of BP 2, no sensors will be deployed or tested on the barge in BP 1 or 2. Small sensors could be attached to the existing ASIT, but would not be utilized in the field during BP 1 and 2.

Project work would include fabrication and testing of equipment. This would include work around heavy equipment and machinery, laboratory equipment, and hazardous chemicals (such as batteries and paint). Existing corporate health and safety standards would be followed for all fabrication and testing work. All work would be conducted in pre-existing facilities. No new permits or modifications to facilities would be required for this work. All waste generated by the proposed tasks would be properly disposed of or recycled.

Any work proposed to be conducted at a federal facility may be subject to additional NEPA review by the cognizant federal official and must meet the applicable health and safety requirements of the facility.

NEPA PROVISION

DOE has made a conditional NEPA determination.

The NEPA Determination applies to the following Topic Areas, Budget Periods, and/or tasks:

Budget Period 1
Budget Period 2

The NEPA Determination does not apply to the following Topic Area, Budget Periods, and/or tasks:

Budget Period 3
Budget Period 4

Notes:

Wind Energy Technology Office
This NEPA determination does require a tailored NEPA provision.
Review completed by Roak Parker, 06/22/2021

FOR CATEGORICAL EXCLUSION DETERMINATIONS

The proposed action (or the part of the proposal defined in the Rationale above) fits within a class of actions that is listed in Appendix A or B to 10 CFR Part 1021, Subpart D. To fit within the classes of actions listed in 10 CFR Part 1021, Subpart D, Appendix B, a proposal must be one that would not: (1) threaten a violation of applicable statutory, regulatory, or permit requirements for environment, safety, and health, or similar requirements of DOE or Executive Orders; (2) require siting and construction or major expansion of waste storage, disposal, recovery, or treatment facilities (including incinerators), but the proposal

may include categorically excluded waste storage, disposal, recovery, or treatment actions or facilities; (3) disturb hazardous substances, pollutants, contaminants, or CERCLA-excluded petroleum and natural gas products that preexist in the environment such that there would be uncontrolled or unpermitted releases; (4) have the potential to cause significant impacts on environmentally sensitive resources, including, but not limited to, those listed in paragraph B(4) of 10 CFR Part 1021, Subpart D, Appendix B; (5) involve genetically engineered organisms, synthetic biology, governmentally designated noxious weeds, or invasive species, unless the proposed activity would be contained or confined in a manner designed and operated to prevent unauthorized release into the environment and conducted in accordance with applicable requirements, such as those listed in paragraph B(5) of 10 CFR Part 1021, Subpart D, Appendix B.

There are no extraordinary circumstances related to the proposed action that may affect the significance of the environmental effects of the proposal.

The proposed action has not been segmented to meet the definition of a categorical exclusion. This proposal is not connected to other actions with potentially significant impacts (40 CFR 1508.25(a)(1)), is not related to other actions with individually insignificant but cumulatively significant impacts (40 CFR 1508.27(b)(7)), and is not precluded by 40 CFR 1506.1 or 10 CFR 1021.211 concerning limitations on actions during preparation of an environmental impact statement.

DOE has determined that work to be carried out outside of the United States, its territories and possessions is exempt from further review pursuant to Section 5.1.1 of the DOE Final Guidelines for Implementation of Executive Order 12114; "Environmental Effects Abroad of Major Federal Actions."

A portion of the proposed action is categorically excluded from further NEPA review. The NEPA Provision identifies Topic Areas, Budget Periods, tasks, and/or subtasks that are subject to additional NEPA review.

SIGNATURE OF THIS MEMORANDUM CONSTITUTES A RECORD OF THIS DECISION.

NEPA Compliance Officer Signature:

 Electronically Signed By: **Roak Parker**

NEPA Compliance Officer

Date: 6/22/2021

FIELD OFFICE MANAGER DETERMINATION

- Field Office Manager review not required
- Field Office Manager review required

BASED ON MY REVIEW I CONCUR WITH THE DETERMINATION OF THE NCO :

Field Office Manager's Signature:

Field Office Manager

Date: