

PMC-ND

(1.08.09.13)

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



RECIPIENT: New York State Energy Research and Development Authority

STATE: NY

PROJECT TITLE: National Offshore Wind Research and Development Consortium

Funding Opportunity Announcement Number	Procurement Instrument Number	NEPA Control Number	CID Number
DE-FOA-0001767	DE-EE0008390	GFO-0008390-013	GO8390

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.

B5.15 Small-scale renewable energy research and development and pilot projects Small-scale renewable energy research and development projects and small-scale pilot projects, provided that the projects are located within a previously disturbed or developed area. Covered actions would be in accordance with applicable requirements (such as local land use and zoning requirements) in the proposed project area and would incorporate appropriate control technologies and best management practices.

Rationale for determination:

The U.S. Department of Energy (DOE) is proposing to provide funding to the New York State Energy Research and Development Authority (NYSERDA) to form a not-for-profit 501(c)(3) entity, the "National Offshore Wind Research and Development Consortium" which would be led by NYSERDA, along with key industry stakeholders and research institutions. The Consortium would finance research initiatives seeking to address the technical barriers faced by offshore wind developers, original equipment manufacturers (OEMs) and supply chain partners, with the goal of reducing the Levelized Cost of Electricity (LCOE) for U.S. offshore wind plants and increasing opportunities for U.S. manufacturing.

The proposed project is divided into four (4) Budget Periods (BPs). DOE previously completed two NEPA reviews [Budget Period 1 (BP1 – Tasks 1-10 and 12-16) (GFO-0008390-001 CX A1, A9 and A13, 10/09/2018); and BP1 Task 11 and BP2 all Tasks (GFO-0008390-002 CX A1, A9 and A13, 1/13/2020)]. In addition, DOE has completed NEPA reviews for specific sub awards under Task 19. This NEPA review is for a sub award proposed to be made under Task 19 to Virginia Tech (VT).

Task 19 in BP2 involves reviewing applications received in response to the solicitation released in Task 18, and then choosing specific projects which would receive a sub award. While NYSERDA is allowed under the previous NEPA determination to proceed with choosing projects under Task 19, all projects chosen for sub award are subject to additional NEPA analysis prior to NYSERDA contracting for the sub award and prior to any work being completed on the sub award.

Under the proposed sub award VT would design, develop, model, fabricate, and test a mooring system for offshore wind turbines.

VT would design an aero-elastic model of offshore turbine components and then design a tuned inerter damper for a semi-submersible mooring system. A goal of the mooring system would be to reduce vibration on turbine and platform, and thus reduce turbine fatigue. Once designed, VT would fabricate a 1:50 scale offshore wind turbine, based on the General Electric Haliade-X 12 MW offshore wind turbine, which would contain a 150 meter tower and 220 meter rotor diameter. As such, the fabricated model would include an approximate 3 meters tall tower, a 2 meter platform, with a scaled, approximate 100 W wind turbine attached. In addition, VT would fabricate the inerter damper and mooring system for stabilization of the platform. Fabrication of all components would utilize approximately 30 kg of aluminum, 45 kg of steel, 20 kg of composite materials (primarily for wind turbine blades) as well as off the shelf components such as a 100 W generator motor.

Design work would be completed by VT, in Blacksburg, Virginia. Additional design and support work would be completed by General Electric Global research in Niskayuna, New York. Fabrication and assembly would involve the use of metals, composites, electronics, and off the shelf components. All fabrication and assembly work would be completed by VT at existing laboratory facilities. Machining and fabrication work would be conducted by professionally trained staff. Existing University health and safety procedures would be adhered to. Training of lab personnel, use of proper protective equipment, monitoring work, and internal assessments would be completed according the University policy. No changes to facilities or permits would be required for the proposed work.

Once fabricated and assembled, the scale model platform, tower, turbine, and mooring system would be shipped to the University of Maine (Maine) for testing at the Alford W2 Ocean Engineering Lab wave tank. The Maine wave tank is a preexisting indoor wave tank testing facility that regularly engages in this type of testing.

Data gathered during tank testing would be analyzed by VT.

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](#)
[Sub Award to Virginia Tech](#)

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

[Budget Period 3](#)
[Budget Period 4](#)

Notes:

[This NEPA determination does require a tailored NEPA provision](#)
[Wind Energy Technology Office](#)
[Roak Parker 11/10/2020](#)

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.

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** _____ Date: 11/12/2020
NEPA Compliance Officer

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: _____ Date: _____
Field Office Manager