PMC-ND

(1.08.09.13)

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

RECIPIENT: NYSERDA **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-0008390-037	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 NEPA reviews for BP1, 2 and 3 (GFO-0009380-001 CX A1, A9 and A13, 10/09/2018; GFO-0009380-002 CX A1, A9 and A13, 01/13/2020; GFO-0009380-019 CX A1, A9 and A13, 12/02/2020). In addition DOE completed NEPA reviews for 16 subawards made by the consortium under Task 19 (GFO-0009380-003 to 018, various CX determinations and dates) as well as awards under an Annual Operating Plan to the National Renewable Energy Laboratory. This NEPA review is for a sub award proposed to be made under Task 27 to Keystone Tower Systems (KTS).

Task 27 in BP3 involves reviewing applications received in response to the solicitation released in Task 26, 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 27, 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 KTS would develop a novel automated manufacturing technique for the fabrication of

wind turbine sections (i.e., welded tubular steel towers). The technique would be developed for offshore wind applications. KTS would manufacture sample coupons and steel cylinders utilizing the technique developed. These would then be analyzed and tested for performance capabilities.

Proposed project activities would include data analysis, computer modeling, material synthesis, component fabrication, performance testing, and conceptual design work. These will each be discussed below.

Computer-based research activities would be used to develop the novel fabrication methodology. KTS would coordinate these activities with its project partners Northeastern University (NEU), Johns Hopkins University, General Electric, and Vestas. Johns Hopkins University, General Electric, and Vestas would not perform any physical experiments and would strictly perform computer-based analysis and/or serve in an advisory role.

Fabrication would be performed by KTS using a modified version of an existing prototype spiral welding machine at KTS' manufacturing facility in Denver, CO. The existing machine, measuring approximately 20' x 20', would be modified to incorporate additional motors and actuators. Hardware modifications would not require any changes to KTS' facility. The prototype machine would be used to synthesize material samples (i.e., steel weld coupons) and to fabricate larger-scale representative wind tower components. The representative wind tower components would consist of 14' long x 4' diameter tower sections. Approximately ten (10) tower sections would be produced by KTS over the course of the project.

Steel weld coupons and fabricated wind tower sections would be delivered to KTS' project partners EWI and NEU, respectively, for performance testing. EWI would perform ultrasonic and fatigue testing on the steel weld coupons using existing equipment at its laboratory facilities in Columbus, OH. NEU would perform buckling testing on the fabricated wind tower sections utilizing an existing testing rig at laboratory facilities at its campus in Burlington, MA. To perform the buckling test, each tower section would be placed between two metal plates. Pressure would then be applied via hydraulic systems in the testing rig until the tower section buckles. Data would be gathered from both the tests at EWI and NEU and used to inform the conceptual designs of potential future tower factories and equipment. These designs would not be implemented as part of the project, nor are there any current plans in place to implement the designs.

KTS would coordinate all project activities amongst its project partners. No physical modifications to existing facilities, ground disturbance, or changes to the use, mission, or operations of existing facilities would be required for any of the above activities. No additional permits or authorizations would be required.

Project work would involve the use and handling of welding tools and powered laboratory equipment. To mitigate potential hazards, KTS and its project partners would adhere to institutional health and safety policies and procedures. All personnel would receive applicable health and safety training. Fabrication activities would be performed utilizing existing fume hoods to control particulate emissions. KTS and its project partners would observe all applicable Federal, state, and local health, safety, and environmental regulations.

Any work proposed to be conducted at a DOE laboratory may be subject to additional NEPA review by the cognizant DOE NEPA Compliance Officer for the specific DOE laboratory prior to initiating such work. Further, any work conducted at a DOE laboratory must meet the laboratory's health and safety requirements.

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
Budget Period 3
Sub Award to Keystone Tower Systems

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

Budget Period 4

Notes:

This NEPA determination does require a tailored NEPA provision
Wind Energy Technology Office
Review completed by Jonathan Hartman, 10/05/2021

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 Date: 10/5/2021

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