

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



RECIPIENT: Orbital Composites, Inc

STATE: CA

PROJECT TITLE : Portside 3D Printed Lightweight Concrete Foundation for Offshore Wind Turbines

Funding Opportunity Announcement Number	Procurement Instrument Number	NEPA Control Number	CID Number
DE-FOA-0002960	DE-EE0011009	GFO-0011009-001	GO11009

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 Orbital Composites, Inc. to conduct 3D printing and testing of fiber reinforced ultra-high performance concrete foundations for offshore wind turbines.

The award would be limited to intellectual and laboratory-scale activities. The project would include component printing and testing at Orbital Composites, Inc. in Campbell, California. Small scale development and 3D printing activities would be performed at Oak Ridge National Laboratory (ORNL) in Knoxville, Tennessee and Northwestern University (NU) laboratories in Evanston, Illinois. Wind and wave testing and final demonstration of a 1:50 scale prototype would be performed at University of Maine's aero-hydro-dynamics lab in Orono, Maine.

The project may release a small level of emissions due to the use of standard construction materials, equipment for laboratory testing and vehicle transport of the printer and associated materials to/from the above-listed facilities. The printer and mixers that would be used for this award are all electric powered, and the generation of gas emissions as a result of these processes are expected to be negligible.

The project would involve the use of cementitious materials and carbon fiber composites, which are both low hazard exposure materials. All handling would occur in-lab for all project stages. All hazardous materials would be managed in accordance with federal, state, and local environmental regulations. All cementitious materials and their additives are commercially available with detailed material handling and exposure guidelines that are approved by the Occupational Safety and Health Administration. Project staff that would be team members on this award are familiar with these materials and use them consistently in their respective labs where they have established health and safety policies and procedures. Procedures including all needed employee training, proper protective equipment, engineering controls, monitoring, and internal assessments are in place at all project laboratories.

Project waste would consist solely of demolished concrete, which is non-toxic and nonhazardous after solidification. Disposal of the produced waste associated with this award would follow all federal, state and environmental guidelines.

All project work would be performed at four existing, purpose-built facilities, with no modification of the existing facilities, ground disturbances, changes in use of facilities or outdoor equipment installations. No additional permits, licenses, or authorizations would be required. DOE does not anticipate any impacts to resources of concern due to the

proposed award activities.

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 final NEPA determination.

Notes:

Advanced Materials and Manufacturing Technologies Office
NEPA review completed by Chris Akios, 05/29/2024

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.

The proposed action is categorically excluded from further NEPA review.

SIGNATURE OF THIS MEMORANDUM CONSTITUTES A RECORD OF THIS DECISION.

NEPA Compliance Officer Signature:  _____ Date: 5/30/2024
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