

RENEWABLE ENERGY PROGRAM: Ongoing Studies

Region: Atlantic

Planning Area(s): All

Title: Proposed Research Related to Technical Approaches for Environmental Review for Offshore Wind Energy Facilities

BOEM Information Need(s) to be Addressed: The National Environmental Policy Act (NEPA) requires that BOEM assess the environmental consequences of Federal actions such as permitting of an offshore renewable energy facility. In several areas, BOEM is looking to improve approaches to preparing NEPA documents, including streamlining the process, addressing cumulative impacts, assessing phased development, and incorporating climate change and benefits.

Approx. Cost: (in thousands) \$1,000 **Period of Performance:** FY 2016-2018

In February 2016, the U.S. Department of the Interior, Bureau of Ocean Energy Management (BOEM) published a broad agency announcement for specific areas of interest to BOEM's Office of Renewable Energy Programs (OREP) in the area of compliance with the National Environmental Policy Act (NEPA) and other environmental laws for offshore renewable energy projects. Seven proposals were funded as a result of this broad agency announcement and are summarized below:

Efficiency of NEPA Documentation for Offshore Wind Energy Facilities

In March 2012, Council on Environmental Quality (CEQ) issued guidance on improving NEPA process efficiency that encourages agencies to take advantage of existing documents and studies, including through adoption and incorporation by reference, and concise reviews and documentation proportionate to potential impacts (77 FR 14473). In addition, CEQ's NEPA regulations state that an environmental impact statement (EIS) should be no more than 300 pages (40 CFR 1502.7). Therefore, BOEM sought new technical approaches to address streamlining NEPA documents such as supporting analyses and/or summaries of information that can be incorporated by reference into its future NEPA documents for offshore wind energy facilities. In particular, the analyses should focus on areas where additional or site specific analysis of a particular impact producing factor or activity is not warranted (see 40 CFR 1502.2(b)) allowing BOEM to focus on the unique aspects of the facility being proposed.

The following has been awarded:

- **Description:** Preparation of a series of case studies based on the European experience, which will analyze impacts of common elements of offshore wind

construction and operation. BOEM anticipates publishing final report in January 2017.

Conducting Organization: Fugro Consultants Inc.

BOEM Contact: [Jennifer Kilanski](#)

- Description: Development of a coastal habitat white paper that can be incorporated by reference to streamline BOEM's future NEPA documents for construction and operations plans (COPs). The initial white paper will focus on a baseline description of coastal habitat along the Atlantic Coast, and analysis of anticipated impacts to those habitat types during COP activities. BOEM has the option to extend this contact for additional white papers addressing biological resources and/or environmental justice and demographics. BOEM anticipates completing the first white paper in Winter 2017.

Conducting Organization: ICF Jones & Stokes, Inc.

BOEM Contact: [Isis Johnson](#)

Scenarios and Assumptions for Phased Development of Offshore Wind Leases

BOEM's renewable energy regulations allow for phased development of offshore wind leases (30 CFR 585.629). The information requirements for phased development are discussed in BOEM's Guidelines for Information Requirements for a Renewable Energy Construction and Operations Plan at <http://www.boem.gov/National-and-Regional-Guidelines-for-Renewable-Energy-Activities/>. To reduce the level of subsequent NEPA documentation needed, BOEM's initial NEPA document should address a reasonable envelope for development of future phases of a wind energy lease or when the details of a project have not yet been resolved (e.g., the "Rochdale Envelope" approach under the United Kingdom's Planning Act 2008). Therefore, BOEM sought new technical approaches for developing scenarios and assumptions that would describe the most likely phased development where a portion or portions of a lease area may be developed with the facility constructed in distinct stages.

The following has been awarded:

- Description: Review of the United Kingdom's (UK) approaches phased development of offshore wind facilities and developing design envelopes and examination how the UK's approaches could be applied and implemented within the current U.S. regulatory regime. BOEM anticipates publishing the final report

in Summer 2017.

Conducting Organization: RPS ASA

BOEM Contact: [Algene Byrum](#)

Greenhouse Gas Emissions and Climate Change Impacts

On December 18, 2014, CEQ released revised draft guidance on how Federal departments and agencies should consider the effects of greenhouse gas (GHG) emissions and climate change in their NEPA reviews. Agencies should consider both the potential effects of a proposed action on climate change, as indicated by its estimated greenhouse gas emissions, and the implications of climate change for the environmental effects of a proposed action. BOEM is also interested in the potential beneficial effects of future offshore wind energy facilities on climate change. Therefore, BOEM sought new technical approaches for analysis and/or assumptions about the impacts of offshore wind to GHG emissions, ocean acidification, and President Obama's Clean Power Plan goals.

The following has been awarded:

- Description: Develop an offshore wind energy facility emission estimation tool for BOEM's NEPA document authors (as well as applicants) to quantify the GHG emissions associated with proposed projects, and assess associated benefits of offshore wind energy facilities. The tool will also ensure consistency in estimating GHG impacts. BOEM anticipates uploading the tool on the BOEM website in Summer 2017.

Conducting Organization: ERG

BOEM Contact: [Motunrayo Kemiki](#)

Benefits of Renewable Energy Projects

BOEM evaluates the environmental and socioeconomic impacts that may result from decisions related to approval of lessees' COPs. These evaluations often focus on the potential detrimental effects from the proposed activities; however, NEPA analyses need to also include beneficial effects. BOEM sought a technical approach for addressing the beneficial effects from offshore wind development a general overview of benefits and/or identify methodologies for specific socioeconomic benefits.

The following have been awarded:

- Description: The study will assess the effects of the Block Island Wind Farm on recreational and tourism activities in Rhode Island and will identify methodologies for assessing socioeconomic benefits from offshore wind development. BOEM anticipates publishing the final report in Winter 2018.

Conducting Organization: University of Rhode Island, Coastal Resources Center

BOEM Contact: [Amy Stillings](#)

- Description: Development of “Ben-Wind,” a model that will estimate air quality and energy system benefits associated with offshore wind projects based on size, location, and other factors. BOEM anticipates publishing the final report in Spring 2017.

Conducting Organization: Industrial Economics, Inc.

BOEM Contact: [Amy Stillings](#)

- Description: Assessment of the benefits of offshore wind energy development. The focus is primarily on economic benefits, while also examining some of the potential environmental benefits. The results will be incorporated into future NEPA analysis. BOEM anticipates publishing the final report in Spring 2017.

Conducting Organization: AECOM

BOEM Contact: [Brian Krevor](#)

Revised Date: September 28, 2016