



Peer Review Plan

Date: December 20, 2023

BSEE Funding Source or Author's Division: Office of Offshore Regulatory Programs
Emerging Technologies Branch 45600
Woodland Road
Sterling, VA 20166

Title: Evaluation of Technology Assessment Program (TAP) 806 – BLOCK ISLAND WINDFARM STRUCTURAL MONITORING

Subject and Purpose: The subject of this study is PEER REVIEW OF REPORT “BLOCK ISLAND WINDFARM STRUCTURAL MONITORING.” This peer review aims to verify the scientific and technical merit of the assumptions, inputs, methodologies, and results of the research conducted.

Through the *Block Island Structural Monitoring Project*, the Bureau of Safety and Environmental Enforcement (BSEE), the Bureau of Ocean Energy Management (BOEM) and the Rhode Island Coastal Resources Management Council (CRMC) have established both a benchmark data set describing offshore wind structural performance in U.S. waters and norms that guide the planning and execution of future monitoring projects in the U.S

Specific tasks for this project included the following:

- Development of a finite element model for use as a digital twin;
- Determination of resonant frequencies and damping of the overall structure;
- An evaluation of the stress-strain time histories over a 12-month period at the base of the tower;
- Measurement of tilt of the structure over a 12-month period;
- An assessment of cyclic loading on the pile foundation; and
- An assessment of structural fatigue from the strain gauge measurements.

This project is to peer review the findings and relevant deliverables of the work performed in the original contract.

Impact of Dissemination: BSEE considers this study is influential scientific information, which requires a robust evaluation that the scientific community and stakeholders will accept. This study's findings may directly impact the production methods, industry specifications, best practices, and selection for equipment utilized for offshore windfarm operations as well as other potential green energy initiatives. The results from this study are essential for reviewing new projects in deeper waters for offshore operations.

Upon conclusion of the peer review, BSEE will post all possible contracted deliverables, tasks, data,

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analyses, and information, including the peer-review reporting, reports, and comments on BSEE's research records website: <https://www.bsee.gov/research-record>.

Timing of Review: Estimated to be from March 1, 2024 – March 30, 2025 (Total peer review process of not more than 12 months is desired for this project.)

Manner of Review, Selection of Reviewers, and Nomination Process:

This peer review shall be conducted through the contract BSEE BPA Process. This process will provide for a panel of qualified subject matter experts (SMEs) selected by the agency in order to achieve an optimum level of expertise across the spectrum of issues. The SMEs will be required to maintain both balance and independence while minimizing any potential conflicts of interest. The public will not be consulted in the nomination of potential peer reviewers.

Primary criteria for peer reviewers include the following:

- Mechanical Engineering, Civil Engineering, Chemical Engineering, Coastal and Ocean Engineering, Atmospheric Physics, etc.
- Offshore Structural Engineering and Dynamics.
- Practical experience and knowledge specific to wind turbines.

The secondary tier of criteria should include the following:

- No more than two persons from petroleum and gas industry
- At least one from outside of the petroleum and gas industry

Reviewers may be selected from academia, industry, and federal government. The group of reviewers shall not include multiple reviewers from the same affiliation and shall strive to include various perspectives on the issue considered.

Expected Number of Reviewers:

Three reviewers, plus contractor oversight, and writing personnel.

Requisite Expertise:

- Subject Matter Experts with five years of experience in a relevant field and should also have some other strong credentials, e.g., a Ph.D. with a substantial publication or patent record specific to the evaluated technology, a young investigator award, or a strong pedigree (e.g., a Ph.D. from a high caliber institution or under a recognized leader in the field).
- Publications and Patents. Qualified experts often have many peer-reviewed journals and/or patents on the evaluated technology.
- Other evidence is that the person is a recognized expert in the field. Qualified experts have often managed a public policy program that has had a national impact, has a record of bringing innovations to the market or holds vital patents.
- In a relevant field, an advanced degree - Ph.D., Sc.D., D.Eng., MS, or MBA. Experts with only a bachelor's degree should have other experience and or a record of significant accomplishments indicating their expertise.

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- Relevant awards. Qualified experts may have received a prestigious award such as the National Medal of Science, American Chemical Society National Award, Young Investigator Award, R&D 100 Award, or other awards specific to technology (e.g., Fuel Cell Seminar Award).
- Key Society Membership. Qualified experts may be members of a society like the National Academy of Sciences (NAS), the National Academy of Engineering (NAE), the American Physics Society, a National Laboratory Fellow, etc.

Opportunity for Public Comment:

At the time of this peer review plan's posting, the research report will be available on BSEE's Peer Review Public Posting website located here: <https://www.bsee.gov/what-we-do/research/peer-review>. BSEE welcomes public comment, especially from those with experience with DP MODUs. BSEE invites the public to comment within the 30-day window indicated on the website through the process described below, which is consistent with the guidance on the website:

- For comments pertaining to this peer review plan, send emails to: bsee_peerreviewplancomments@bsee.gov
- For comments pertaining to the research, send emails to: bsee_researchpubliccomment@bsee.gov

In the subject line list of a public comment email, please state: TAP 806 – BLOCK ISLAND WINDFARM STRUCTURAL MONITORING + the words "peer review plan" or "research" + the words "public comment."

- List out any comments, questions, feedback by number (ex. 1, 2, 3, etc.)
- If referencing any sources of published information, please list the complete source information in a recognized reference format (such as APA)
- Please include your name, contact information, and affiliation

The agency will provide public comments deemed significant and relevant to the peer reviewers to address during their review.

Agency Contact: Kellen Schroeder

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