Environmental Studies Program: Ongoing Study

Title	Real-time Opportunity for Development Environmental Observations (RODEO) II (AT-20-05)
Administered by	Office of Renewable Energy Programs
BOEM Contact(s)	Mary Boatman (mary.boatman@boem.gov)
Procurement Type(s)	Contract
Conducting Organization(s)	HDR, CSA Ocean Sciences
Total BOEM Cost	$757,565 (Task Order 1); $837,315 (Task Order 2)
Performance Period	FY 2020–2024
Final Report Due	Multiple Dates
Date Revised	August 4, 2023
PICOC Summary	
Problem	Impact analyses are based on models and estimates rather than actual measurements or observations.
Intervention	Collect observations during activities to improve predictions of impacts from future development.
Comparison	The observations will be compared to model estimates.
Outcome	Results of the study will be used to improve impact analyses and mitigation.
Context	The geographic area is the Atlantic coast from Maine to Georgia.

BOEM Information Need(s): BOEM is responsible for the approval of a construction and operations plan submitted by developers for wind facilities on the Outer Continental Shelf. The approval process includes the analysis of the environmental effects from the construction, operation, and decommissioning of these facilities. Real-time measurements of the construction and operation of the first facilities to be built will allow for more accurate assessments of the actual environmental impacts. Without real time observations of the activities, best estimates based on perceived activities are used to make these determinations.

Background: The construction of the first wind facilities in the offshore environment offers an opportunity to address many of the environmental questions that are of concern to the public. Federal and state agencies have mandates to protect the environment and will need to evaluate the environmental impacts from wind development. Through a collaborative effort with other Federal and state agencies, the construction and operation of offshore wind turbines can be studied to gain insight into the actual disturbances to the environment. Without these real-time observations, analyses are based on best guesses and scenarios that are often conservative.

Analyses of the environmental consequences require knowledge or estimates of the duration and extent of the activity. For example, the extent of disturbance on the seafloor from anchors may be estimated to encompass a larger area than actually occurs. Vessels may use dynamic positioning, resulting in no disturbance from anchoring. An analyst relies on the best available information and assumptions about

the activities based on previous experience. For offshore wind development, there is no previous experience, so the analyses and subsequent mitigation measures are based on an educated guess. These analyses would benefit from real-time, independent observations during actual construction activities.

The example of anchoring is only one aspect that is estimated. A full environmental analysis includes estimates of air emissions, sound produced by the activities, sea floor disturbance by cabling, and potential discharges from vessels, to name a few. The duration of these activities is also included in the analysis. Better estimates of these activities will result in more realistic mitigation measures that appropriately reduce or eliminate the impacts. Without accurate information, developers may be required to take measures that are ineffectual.

This study is a follow-on to the first RODEO study that focused on the construction and operations at the Block Island Wind Farm off Rhode Island (HDR, 2018a; HDR 2018b; and Elliot et al. 2017).

Objectives: The objective of the study is to improve impact analyses and mitigation of offshore wind construction and operation.

Methods: Observations will be made using appropriate monitoring equipment from survey vessels. The specific activities to monitor will be developed through discussions with subject matter experts, both within BOEM and other Federal and state agencies.

Specific Research Question(s): What are the actual impacts from construction and operation of wind facilities?

Current Status:

Task Order 1: Returning to Block Island Wind Farm to monitor for seafloor recovery and alterations to the benthic environment from the presence of turbines. Final reports are available:

[Seafloor Disturbance and Recovery Monitoring at the Block Island Wind Farm, Rhode Island - Summary Report (Year 6)](#)

[Benthic and Epifaunal Monitoring During Operation at the Block Island Wind Farm, Rhode Island – Technical Report - Year 4](#)

Task Order 2: South Fork Wind project is anticipated to be constructed in 2023. This task order will conduct acoustic monitoring during the construction of the wind facility focusing on pile driving.

Publications Completed: None

Affiliated WWW Sites: https://www.boem.gov/rodeo

References:

HDR. 2018a. Benthic Monitoring during Wind Turbine Installation and Operation at the Block Island Wind Farm, Rhode Island. Final Report to the U.S. Department of the Interior, Bureau of Ocean Energy Management, Office of Renewable Energy Programs. OCS Study BOEM 2018-047. 155 p.

HDR. 2018b. Field Observations during Wind Turbine Foundation Installation at the Block Island Wind Farm, Rhode Island. Final Report to the U.S. Department of the Interior, Bureau of Ocean Energy Management, Office of Renewable Energy Programs. OCS Study BOEM 2018-029. 175 p.

HDR. 2020. Benthic and Epifaunal Monitoring During Wind Turbine Installation and Operation at the Block Island Wind Farm, Rhode Island – Project Report. Final Report to the U.S. Department of the Interior, Bureau of Ocean Energy Management, Office of Renewable Energy Programs. OCS Study BOEM 2020-044. Volume 1: 263 pp; Volume 2:380 pp.

HDR. 2020. Seafloor Disturbance and Recovery Monitoring at the Block Island Wind Farm, Rhode Island – Summary Report. Final Report to the U.S. Department of the Interior, Bureau of Ocean Energy Management, Office of Renewable Energy Programs. OCS Study BOEM 2020-019. 317 pp.