

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



RECIPIENT: [NREL](#)

STATE: [CO](#)

PROJECT TITLE : [25-024-001 Pioneer WEC Deployment Nags Head, NC](#)

Notice of Funding Opportunity Number

Procurement Instrument Number
[DE-AC36-08GO28308](#)

NEPA Control Number
[GFO-NREL-25-024-001](#)

CID Number
[GO28308](#)

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:

[B3.2 Aviation activities](#)

[Aviation activities for survey, monitoring, or security purposes that comply with Federal Aviation Administration regulations.](#)

Rationale for determination:

The U.S. Department of Energy's (DOE) National Renewable Energy Laboratory (NREL) is proposing to partner with the DOE Water Power Technologies Office (WPTO) to use uncrewed aircraft systems (UAS) to capture high-definition video and photographs of the Pioneer Wave Energy Converter (WEC) project located off the coast of Nags Head, North Carolina.

The purpose of the proposed project is to obtain high-definition videography and photography of the lifecycle of the Pioneer WEC during key stages of project development. The UAS would be an ocean deployment 25 nautical miles off the coast of Nags Head, North Carolina. A NEPA Determination (NREL-25-024; exclusions B3.2; signed 09/04/2025) was completed previously for deployment, preparation, and testing done at the Woods Hole Oceanographic Institution.

The UAS that would be used for aerial survey is a Department of Energy (DOE) owned Parrot Ai. Flights would be conducted with a minimum flight crew of two. The minimum essential flight crew is the pilot in command (PIC) and one visual observer.

Following a set flight plan, the UAS would be deployed from the Coastal Studies Institute's (CSI) 42-foot Duffy vessel. A launch/landing pad would be used. Flights would be performed over open water to the buoy and consist basic maneuvers like lateral passes to capture images and videos. Flights would be conducted within the visual line of sight with the UAS. All flights would be conducted from the deck of the vessel. A visual observer would be present to assist the pilot to identify air traffic, birds, and situational awareness.

All flights would be conducted during daylight hours only. The UAS speed would not operate at wind speeds higher than 22 mph. Flights over water would maintain a safe horizontal and vertical separation from vessel structures and flight crew. The UAS would not fly over people and non-flight crew would depart to the boat's pilothouse during takeoff and landing. Flights would conclude when 40% battery power is reached. There are no airspace restrictions in the vicinity of the facility and UAS flights would be allowed to ascend to a maximum of 399 feet above sea level.

Impacts

Within the project area, there are three endangered species listed by the United States Fish and Wildlife Service (USFWS) Information for Planning and Consultation (IPaC) report. The threatened and endangered species include the Bermuda Petrel, Black-capped Petrel, and Roseate Tern. There are no critical habitats present at the project location.

A visual observer would be present during all flights to ensure there are no collisions with birds or bats. If bats, birds, or flocks of birds enter the takeoff area prior to deployment of the UAS, the flight would not occur. The UAS would be moved away and grounded when bats, birds, or flocks of birds are present. The UAS may emit low levels of noise but due to the short duration of the flights and the ambient noise generated by the surrounding area, adverse impacts due to noise are not anticipated. Due to the short duration of the flights, the presence of a visual observer before and during each flight, and that flights would only occur during daylight hours, DOE has determined there would be no effect on special status species as a result of project activities.

Flight activities would be conducted by NREL staff as authorized in accordance with NREL policies, procedures, and safety requirements under FAA Part 107 regulations. This proposed flight resides within the Class G airspace, for which no notifications, authorization, or permits are required. Based on the location of the flights and planned safety measures, no adverse impacts are expected.

A risk assessment has been completed for this project. Operational parameters, hazards, and controls are identified in an Aviation Safety Plan that was prepared in consultation with NREL Environment, Safety, and Health staff and the UAS Steering Committee. The Flight Plan for this project has been submitted and approved by the Golden Field Office's Aviation Manager and Office Director. The Aviation Manager determined that the identified flight risks for the project "have been adequately identified and mitigated to low risk per the DOE Risk Assessment. If flight conditions change or the documented mitigation factors are unable to be implemented the mission will need to be paused so a reevaluation of hazards can occur."

For Categorical Exclusion Determinations:

- The proposal fits within a class of actions that is listed in Appendix B to 10 CFR Part 1021 or Appendix B and C of DOE's NEPA Implementing Procedures (June 30, 2025). To fit within the classes of actions listed in Appendix B to 10CFR Part 1021, or Appendix B of DOE's NEPA Implementing Procedures, a proposal must satisfy the conditions that are integral elements of the classes of actions in Appendix B of both 10 CFR Part 1021 and DOE's NEPA Implementing Procedures.
- 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.
- The proposed action is categorically excluded from further NEPA review.

NEPA PROVISION

DOE has made a final NEPA determination.

Include the following condition in the financial assistance agreement:

All required permits and permissions shall be obtained as required prior to conducting flight activity.

Notes:

NREL,
Brandon Bammel, 10/03/2025

SIGNATURE OF THIS MEMORANDUM CONSTITUTES A RECORD OF THIS DECISION.

NEPA Compliance Officer Signature:

 Electronically
Signed By: **Nicole Serio**

NEPA Compliance Officer

Date: 10/7/2025

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:

Field Office Manager

Date: _____