

Environmental Studies Program: Ongoing Study

Field	Study Information
Title	Greenhouse Gases & Climate Change Research (NT-23-x12)
Administered by	Office of Environmental Programs
BOEM Contact(s)	Holli Wecht (Holli.Wecht@boem.gov)
Procurement Type(s)	Interagency Agreement
Conducting Organization(s)	DOE's Argonne National Laboratory (ANL)
Total BOEM Cost	\$461,400
Performance Period	FY 2021–2026
Final Report Due	September 2024
Date Revised	October 3, 2023
Problem	In response to Executive Order 14008 (“Tackling the Climate Crisis at Home and Abroad”) issued January 27, 2021, and Secretary’s Order No. 3399, issued April 16, 2021 (“Department-Wide Approach to the Climate Crisis and Restoring Transparency and Integrity to the Decision-Making Process”), BOEM is potentially considering the control of greenhouse gases (GHGs) emissions from its’ authorized sources to meet the required 50% emissions reduction by 2030 and the 100% reduction by 2050.
Intervention	The purpose of this IAA is to procure scientific research, analysis, and assistance to identify greenhouse gases emissions and climate change impacts from the Outer Continental Shelf oil and gas activities in the Gulf of Mexico Region (GOM). In addition, mitigation opportunities to reduce greenhouse gas emissions from oil and gas sources will be detailed based on BOEM’s emissions inventories.
Comparison	Comparison of the current program with limited mitigations and with additional mitigations to meet the 2030 and 2050 reduction goals.
Outcome	Using research on technical mitigation opportunities that are based on BOEM’s emissions inventories, BOEM can possibly reduce GHGs emissions to meet the required 50% reduction by 2030 and the 100% reduction by 2050.
Context	Gulf of Mexico

BOEM Information Need(s): BOEM needs a technical basis to reduce oil and gas related greenhouse gases offshore in response to E.O. 14008 and S.O. No. 3399.

Background: The DOI’s BOEM manages the responsible development of America’s offshore energy and mineral resources. The Bureau promotes energy independence, environmental protection, and economic development through responsible, science-based management of energy and mineral resources on the OCS. The mission of BOEM is to manage development of OCS energy and mineral resources in an environmentally and economically responsible way. All BOEM’s activities are supported

by a robust environmental program, which ensures that science-based environmental protection is at the forefront of BOEM's decision making.

The environmental program is responsible for National Environmental Policy Act (NEPA), analyses at the national level as well as on rulemakings and other decisions which may invoke a NEPA analysis. This requires a broad range of expertise in subjects ranging across the physical and biological environments, as well as the human dimension in the marine environment. In addition, an understanding of the current conditions, or baseline, and how it is changing over time as stressors, such as noise, air and water pollution, alighting, and other factors change on the OCS and nearby coastal areas.

In response to Executive Order 14008, ("Tackling the Climate Crisis at Home and Abroad"), issued January 27, 2021, and Secretary's Order No. 3399, issued on April 16, 2021 ("Department-Wide Approach to the Climate Crisis and Restoring Transparency and Integrity to the Decision-Making Process"), BOEM is considering the control of greenhouse gases (GHGs) emissions. The purpose of BOEM's new GHG initiative is to minimize the release of GHGs from BOEM's authorized sources on the OCS. This effort could potentially involve establishing a limit on total emissions or some other mechanism (such as cap and trade or credits) to substantially reduce the level of emissions emitted from OCS sources.

BOEM's effort is to support the Administration and Department's overall goal to reduce GHG emissions throughout the US, with a particular focus on emissions associated with the production of hydrocarbons onshore and offshore.

Objectives: ANL will assist BOEM in determining and evaluating all the relevant impacts of climate change on the OCS and coastal areas and assist BOEM in evaluating these impacts. ANL will also assist BOEM to analyze all GHG emissions from offshore operations, including exploration and production as well as support operations provided by offshore facilities, vessels, vehicles, and aircraft. BOEM has conducted a comprehensive emissions inventory study in 2017 (Wilson et al. 2019) and has ongoing efforts in conducting a 2021 emissions inventory. The goals of Argonne's activities are to help BOEM identify the contribution of OCS emissions to climate change; to quantify harm to the OCS environment from climate change; and to develop a technical basis for reduction of GHGs emissions.

Methods: This IAA order will consist of literature reviews, research, modeling, drawing conclusions based on data, and report drafting, with end results being supporting technical reports with figures and images, as needed. Three documents will be produced: Harm Document (Task 1), GHG Mitigation Opportunities (Task 2), and Other Agencies Approach to Reducing GHGs (Task 3). In addition to the technical and editorial document reviewers at BOEM, these documents may need solicitor review and approval.

Specific Research Question(s):

1. What are the impacts of greenhouse gas emissions on coastal and marine environments?
2. What mitigation opportunities will reduce greenhouse gas emissions offshore?
3. Do approaches other agencies are using (USEPA, BLM, PHMSA) applicable offshore?

Current Status: The DOE's ANL IAA was awarded, and research is concluded. ANL has drafted three documents for finalization and review. As of August 2023, the Harm Document (Task 1) is final and published. BOEM is reviewing draft versions of the Tasks 2 and 3 documents.

Publications Completed:

https://epis.boem.gov/final%20reports/BOEM_2023-009.pdf

Affiliated WWW Sites:

<https://www.federalregister.gov/documents/2021/02/01/2021-02177/tackling-the-climate-crisis-at-home-and-abroad>

https://www.doi.gov/sites/doi.gov/files/elips/documents/so-3399-508_0.pdf#:~:text=ORDER%20NO.%203399%20Subject%3A%20Department-Wide%20Approach%20to%20the,production%20as%20tools%20to%20help%20tackle%20climate%20change.3%2C4

References:

Wilson D, Billings R, Chang R, Do B, Enoch S, Perez H, Sellers J. 2019. Year 2017 emissions inventory study. New Orleans (LA): U.S. Department of Interior, Bureau of Ocean Energy Management. 231 p. Report No.: OCS Study BOEM 2019-072.