BOEM
Bureau of Ocean Energy Management

2023-2028 Proposed Program: Greenhouse Gas Analysis Estimates of Greenhouse Gas Emissions

Key drivers of climate change are increasing atmospheric concentrations of greenhouse gases (GHGs). These GHGs reduce the ability of solar radiation to re-radiate out of Earth's atmosphere and into space, increasing the planet's average temperature, causing climate change. BOEM's analysis evaluates the role of OCS oil and gas leasing and development (and No Sale Option substitutes) in contributing to climate change.

What GHG emissions does BOEM estimate?

BOEM's net benefits analysis accounts for domestic upstream emissions of the three main GHGs (carbon dioxide [CO2], methane [CH4], and nitrous oxide [N2O]) from OCS oil and gas leasing and development, as well as from substitute energy sources under the No Sale Option.

OCS OIl and Gas (and substitute energy) Emissions from:

Upstream
Exploration, development, production, and transportation to shore

→

Midstream
Refining, processing storage, and distribution

→

Downstream
Consumption by the customer

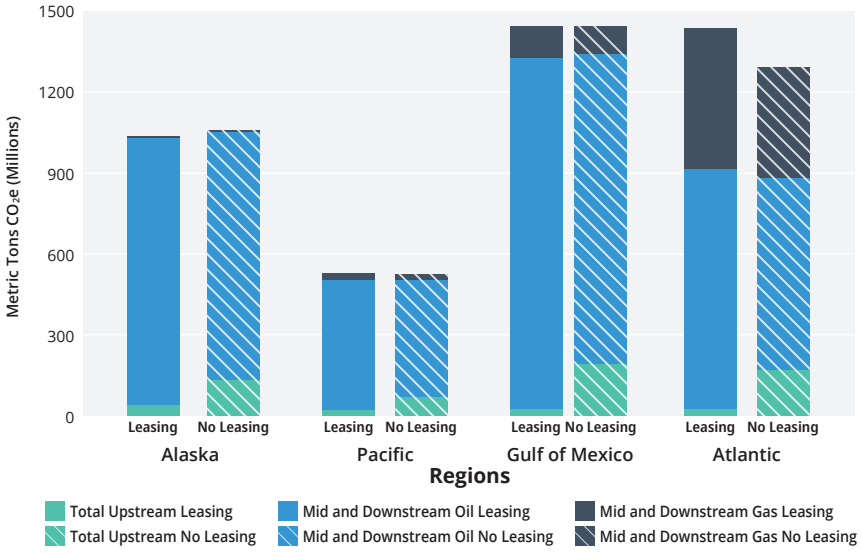
The Draft Programmatic Environmental Impact Statement (Draft PEIS), extends the analysis and adds the **domestic midstream** (refining, storage, distribution) and **domestic downstream** (consumption) emissions to estimate the full lifecycle greenhouse gas emissions.

What are the key emissions differences between Leasing and a No Sale Option?

No Sale Option upstream GHG emissions are larger than Leasing upstream emissions due to lower GHG emissions for OCS oil and gas production relative to most other energy sources. However, in the mid- and downstream, Leasing results in more emissions than substitute sources under the No Sale Option due to reduced oil and gas consumption and increased renewable energy consumption.

For the full lifecycle, under the No Sale Option, emissions are lower for areas with higher gas-to-oil production ratios (like the Atlantic) relative to other areas.

Estimated Domestic Lifecycle GHG Emissions: Leasing vs No Leasing



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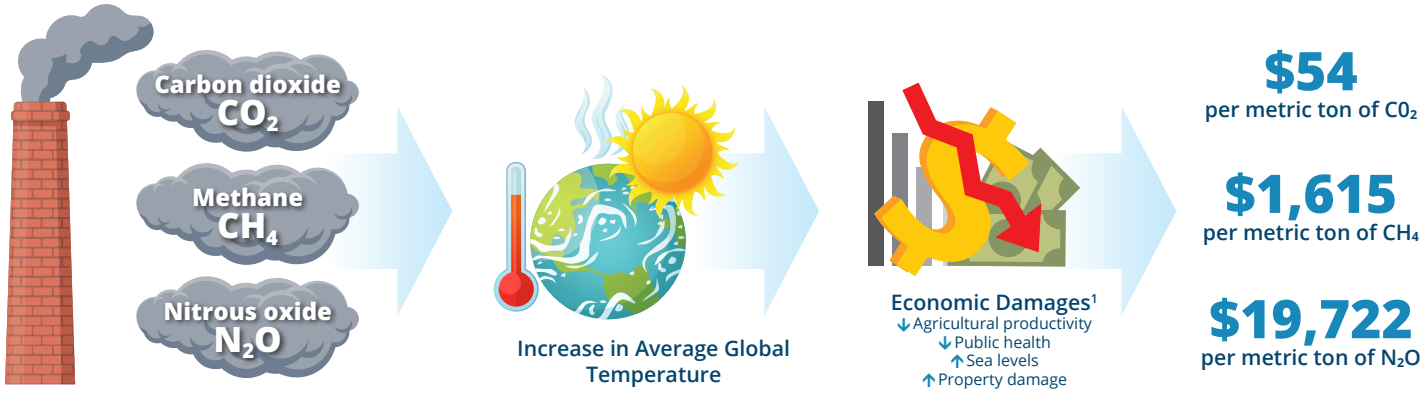
2023-2028 Proposed Program: Greenhouse Gas Analysis Social Cost of Greenhouse Gas Emissions

Social Cost of Greenhouse Gas (GHG) Emissions:

The social cost of GHGs are estimates of the monetary value of the net harm to society associated with adding one metric ton of GHG to the atmosphere in any given year.

- A social cost of GHG value is specific to a given year and increases through time as the harm in later years leads to greater damages given the compounding nature of GHG emissions and their relationship to an increasing Gross Domestic Product.

How are estimates of GHG emissions converted into estimates of social costs of GHG emissions?



- BOEM's net benefits analysis is limited to the **domestic upstream impacts** (exploration, development, production, and transportation to shore).
- The PEIS extends the analysis and adds the **domestic midstream** (refining, storage, distribution) and **domestic downstream** (consumption) emissions to estimate the full lifecycle greenhouse gas emissions.

Note: *Due to past court decisions and statutory limits on the factors that can be considered, the full lifecycle social cost of carbon presented in the PEIS is not being used for decisionmaking on the National OCS Program. The full lifecycle material included in Sections 2.2.2, 2.2.3, and Appendix C of the PEIS is intended to provide the public with an overview of the lifecycle emissions and emissions changes in foreign markets.*

1: *BOEM uses the February 2021 Interagency Working Group's per-unit SC-GHG estimates to monetize the costs of the GHG emissions it estimates from lifecycle of the Program and substitute energy sources. The SC-GHG estimates above are for emissions in 2022 and are inflated to 2022 dollars.*