BOEM
Bureau of Ocean Energy Management

Gulf of Mexico: Lease Sale 259 Greenhouse Gas Analysis

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 analysis accounts for emissions of the three main GHGs (carbon dioxide [CO_2], methane [CH_4], and nitrous oxide [N_2O]) from the full life cycle of domestically produced or consumed energy as well as the downstream (consumption) of oil in foreign energy markets. The analysis estimates emissions from OCS oil and gas leasing and development under the Alternative A, as well as from substitute energy sources under the No Action Alternative.

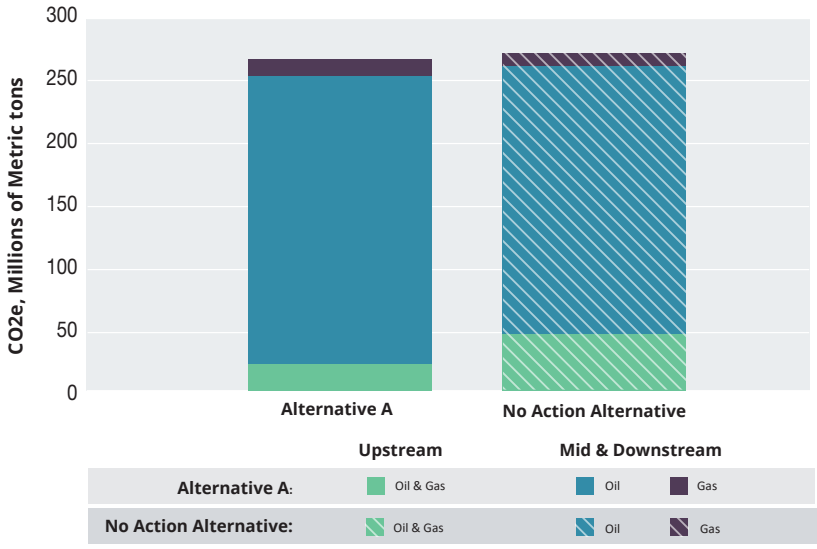
Key differences between the Alternative A and No Action Alternative:

Upstream GHG emissions under the No Action Alternative are larger than those of Alternative A due to lower GHG emissions for OCS oil and gas production relative to most other energy sources.

However, in the mid- and downstream, Alternative A results in more emissions than substitute sources under the No Action Alternative due to reduced oil and gas consumption and increased renewable energy consumption.

In total, when looking at GHG emissions from the full life cycle of only domestic production or consumption, there is very little difference between the Alternative A emissions and those of the No Action Alternative. However, when considering the No Action Alternative's lower foreign GHG emissions from lower foreign oil consumption, global emissions are expected to be lower under the No Action Alternative than Alternative A.

Estimated GHG Emissions from Full Life Cycle of Domestically Produced or Consumed Energy

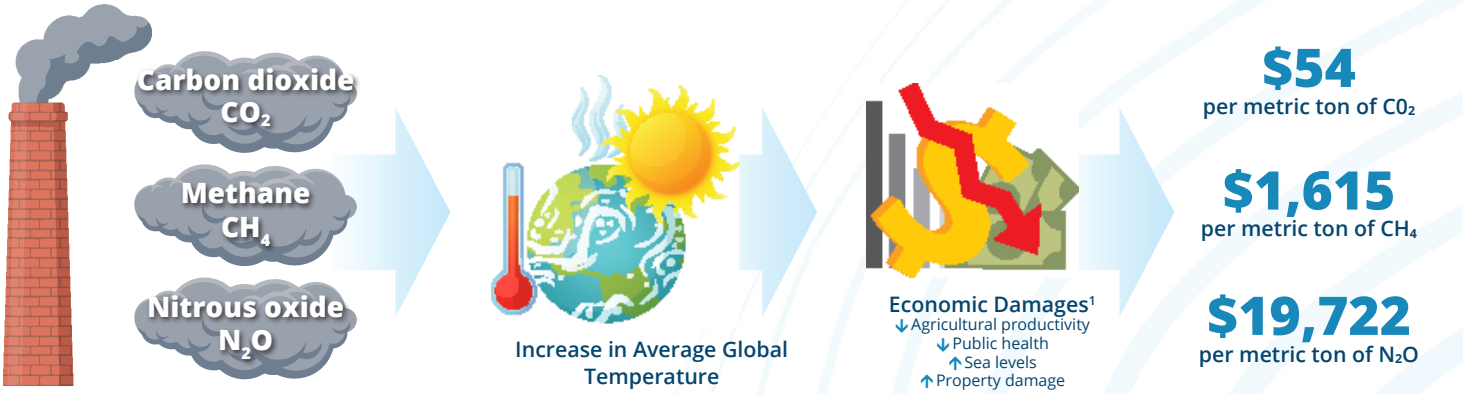


Gulf of Mexico Greenhouse Gas Analysis Social Cost of Greenhouse Gas Emissions

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 GHG analysis adds the **domestic upstream** impacts (exploration, development, production, and transportation to shore). the **domestic midstream** (refining, storage, distribution), and the **domestic downstream** (consumption) emissions together to arrive at the estimate of social cost of the **full life cycle** of greenhouse gas emissions from domestically produced or consumed energy attributable to Alternative A.
- Social costs associated with an increase in **foreign consumption of oil** are presented separately.

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.*

For More Information:

https://www.boem.gov/GoM-Sales-259-and-261-SEIS

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