

Monitoring Methane Emissions: Addressing Climate Change

ACTION

Members of Congress should reintroduce and support the Methane Emissions Mitigation Research and Development Act.

Methane Emissions from Oil and Gas: Key Climate Change Contributor

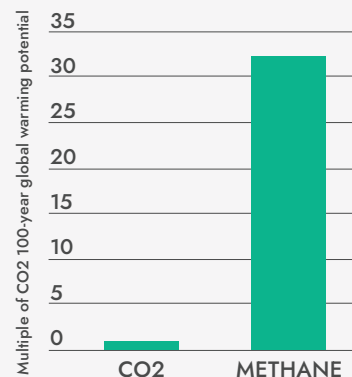
Methane (CH₄) is the second-most abundant anthropogenic greenhouse gas and significantly contributes to global warming.



2017 Global Methane Budget from Man-made Sources

Sources: The Global Methane Budget 2000-2017, by Marielle Saunois et al, Earth System Science Data, DOI:10.5194/essd-12-1561-2020

100-Year Global Warming Potential



Source: M. Etminan et al., Geophysical Research Letters 43 (2016)

“Although the challenge of reducing methane emissions can be daunting, the results from aerial monitoring show that with a technology and data-driven approach, operators can significantly reduce emissions while simultaneously reducing costs and improving operational efficiency.”

- Pioneer Natural Resources (major U.S. oil and gas producer; 2022)

Opportunity for Impactful Action

Methane emissions from oil and gas production are localized, intermittent, and dominated by a relatively small number of super-emitters: less than 10% of sources of methane in oil and gas operations contribute more than half of the emissions in the sector.

Current Monitoring Capabilities Are Ineffective

- There are no calibration standards that allow for comparison or aggregation of observations from different tools.
- Current monitoring technologies face significant technological challenges limiting their effectiveness.
- Current methane monitoring systematically underestimates emissions by up to a factor of three.

A National Approach Is Needed for Effective Methane Emissions Reduction

The Methane Emissions Mitigation Research and Development Act addresses methane monitoring inefficiencies by:

- ▶ Building a national approach for testing and calibration of new methane monitoring technologies.
- ▶ Directing support to critical research areas essential for effective monitoring of methane emissions.
- ▶ Improving the ability of the United States to accurately estimate methane emissions nationally, which is critical to any strategy addressing climate change.