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Navigating the Evolving Landscape of EPA Methane Emissions Reporting

Sharyn Lie

Director of Climate Change Division, U.S. EPA

Srijana Rai

Principal Analyst, Zero Emissions Systems, GTI Energy

Erin Blanton

Vice President, Zero Emissions Systems, GTI Energy

April 22, 2024



GTI ENERGY



ADVANCING METHANE EMISSION REDUCTIONS FROM THE OIL AND GAS SECTOR

Sharyn Lie
Director, Climate Change Division
US Environmental Protection Agency

GTI Veritas Webinar

Outline

- Background
- Update on the Methane Emissions Reduction Program Financial and Technical Assistance
- Summary of EPA regulatory activity





Background

Methane Emissions in the United States

- U.S. EPA annually compiles data on greenhouse gas emissions from different economic sectors
- In 2022, petroleum and natural gas systems accounted for over 30% of total U.S. methane emissions.

2022 U.S. Methane Emissions, By Source

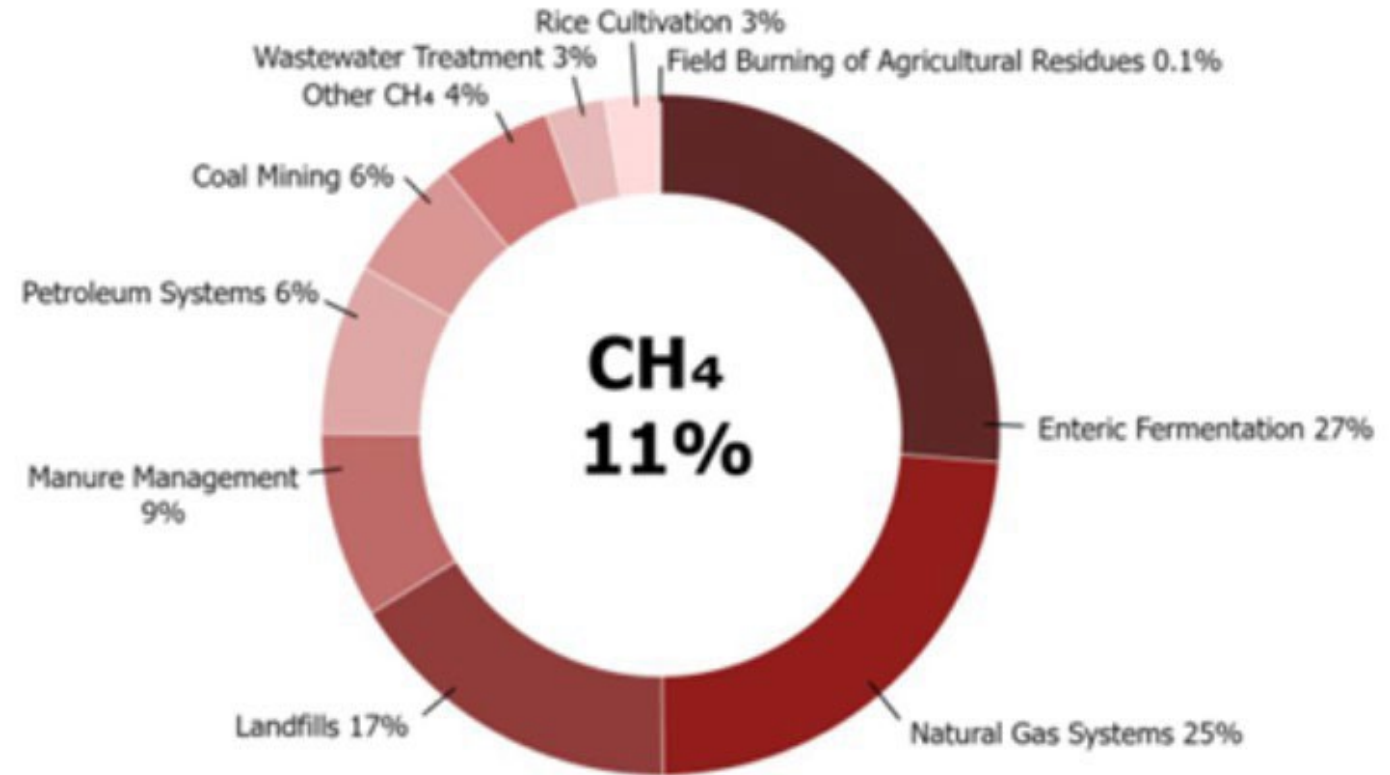


Figure 3: 2022 U.S. Sources of Methane (CH₄) Emissions, excluding CH₄ emissions from LULUCF sector from flooded lands, forest, and grassland fires.

EPA Programs

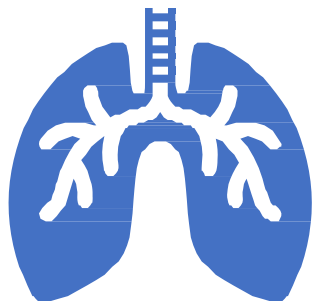
- The Inflation Reduction Act of 2022 (IRA) directed EPA to implement a suite of actions to swiftly reduce methane emissions under the Methane Emissions Reductions Program (MERP).
- EPA is working to implement the three-part framework of MERP:
 - EPA is partnering with DOE to provide [financial and technical assistance](#).
 - EPA proposed [revisions to Subpart W of the Greenhouse Gas Reporting Program](#)
 - EPA proposed regulation to implement the [Waste Emissions Charge](#).
- MERP builds upon the New Source Performance Standards and Emissions Guidelines (NSPS/EG), which were published on March 8, 2024.



Expected Impact of EPA's Oil and Gas Methane Actions

Together, this complementary suite of actions will...

- Advance the adoption of clean, cost-effective technologies
- Reduce wasteful practices
- Advance our nation's efforts to tackle the climate crisis



And yield significant economic and environmental benefits:

- Cut dangerous air pollution and improve the health and welfare of communities across the nation
- Deliver savings from recovering wasted natural gas and provide long-lasting benefits to consumers
- Improve the competitiveness of the U.S. oil and gas sector in global energy markets and help position the U.S. as the most efficient producer of oil and natural gas in the world

MERP Financial and Technical Assistance

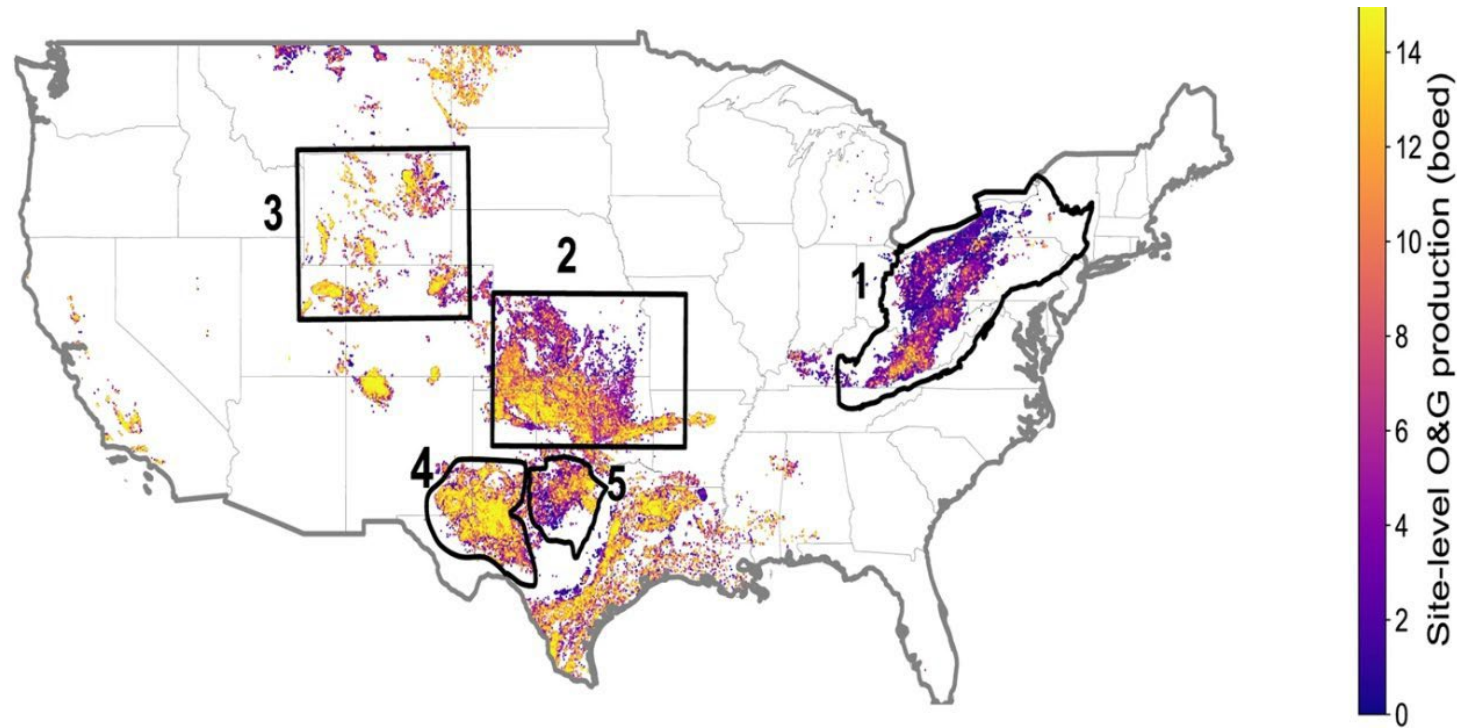
Financial and Technical Assistance

- EPA, DOE, and DOE's National Energy Technology Laboratory (NETL) are partnering to provide:
 - More than \$1 billion in **financial assistance** for methane monitoring and to reduce methane emissions from the oil and gas sector.
 - **Technical assistance** to help states, industry, and other partners implement cost-effective solutions to monitor and reduce methane emissions.
- EPA and DOE are collaborating to leverage shared commitment and joint expertise in advancing methane monitoring and reduction technologies.
- This combination of technical and financial assistance will help reduce inefficiencies of U.S. oil and gas operations, create new jobs in energy communities, and realize near-term emission reductions.
- EPA will also be providing technical assistance to help industry understand the new regulatory requirements.



Mitigating Emissions from Marginal Conventional Wells

- In December 2023, EPA and DOE announced a conditional commitment to 14 eligible states for \$350 million.
- States will help oil and gas well owners and operators:
 - voluntarily and permanently reduce methane emissions from low-producing conventional wells on nonfederal lands and
 - support environmental restoration of well sites.
- Low-producing conventional wells are typically older wells that have decreased production over time while releasing disproportionately high methane emissions.



Source: Omara, M., Zavala-Araiza, D., Lyon, D.R. *et al.* Methane emissions from US low production oil and natural gas well sites. *Nat Commun* 13, 2085 (2022).
<https://doi.org/10.1038/s41467-022-29709-3>

Oil and Gas Methane Monitoring and Mitigation

- A competitive funding opportunity is expected to open later in 2024.
- A [Notice of Intent](#) was released in February 2024 to share preliminary information about this funding opportunity.
- Intent of the competitive funding opportunity:
 - Available to a variety of applicants for the purpose of monitoring and mitigating methane emissions and legacy air pollution from oil and gas assets
 - Accelerate cost reductions and commercial deployment of innovative methane emissions reduction technologies
 - Advance the characterization and reduction of methane emissions by collecting and analyzing multi-scale, measurement-informed data that support environmental justice and worker safety



New Source Performance Standards (0000b) and Emission Guidelines (0000c)

New Source Performance Standards (0000b) and Emission Guidelines (0000c)

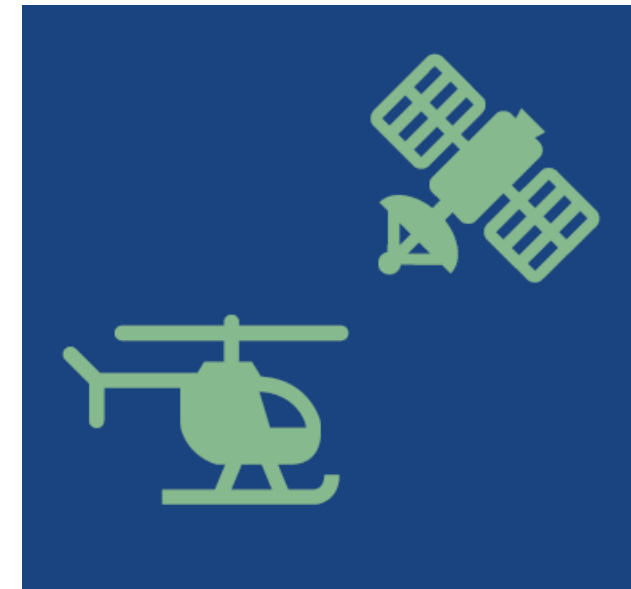
- Final rule signed December 2023, published March 2024.
- **0000b:** Standards to reduce methane and VOCs from new, modified and reconstructed sources.
- **0000c: Emissions Guidelines:** Provide procedures for states to follow as they develop plans to limit methane emissions from existing sources.
 - State plans due 24 months after rule publication
 - 1st time (methane and VOC rules) include existing sources nationwide
- Key features:
 - **Leak Detection:** Ensures that all well sites, centralized production facilities, and compressor stations are routinely monitored for leaks.
 - **Associated Gas:** Eliminates routine flaring of methane from new oil wells.
 - **Venting:** Requires owners and operators to use best management practices to minimize or eliminate venting of emissions from gas well liquids unloading.



New Source Performance Standards (0000b) and Emission Guidelines (0000c)

Key Feature: Super Emitter Program (SEP)

- Advanced Methane Detection Technologies & Super Emitter Program (SEP)
 - Options for using advanced methane detection technologies to find leaks and emission events through the SEP.
- EPA will have a strong oversight role to ensure the program operates with a high degree of integrity, transparency, and accountability.
- EPA will:
 - Approve third-party notifiers
 - Receive and evaluate third-party data
 - Notify owners and operators
 - Make super emitter data public on a timely basis
 - Only approved remote-sensing technologies like satellites and aerial monitoring will be allowed



<https://www.epa.gov/controlling-air-pollution-oil-and-natural-gas-operations/epas-final-rule-oil-and-natural-gas>

GHGRP Subpart W Revisions

Greenhouse Gas Reporting Program (GHGRP)

- Launched in response to Fiscal Year 2008 Consolidated Appropriations Act under Clean Air Act authority and codified at 40 CFR Part 98
- Annual reporting of greenhouse gas (GHG) data by 41 source categories
- Most facilities compare estimated emissions for the facility to a 25,000 metric tons CO₂ equivalent (CO₂e) threshold to determine applicability
 - Covers a subset of oil and gas facilities; for example, about half of onshore oil and gas producing wells are subject to GHGRP
- Direct reporting to EPA electronically via EPA electronic GHG Reporting Tool (e-GGRT)



Production & Processing

1. Onshore Petroleum & Natural Gas Production ★
2. Offshore Petroleum & Natural Gas Production
3. Petroleum Refining
4. Gathering and Boosting ★
5. Gas Processing Plant ★
6. Natural Gas Liquids (NGL) Supply

Natural Gas Transmission & Storage

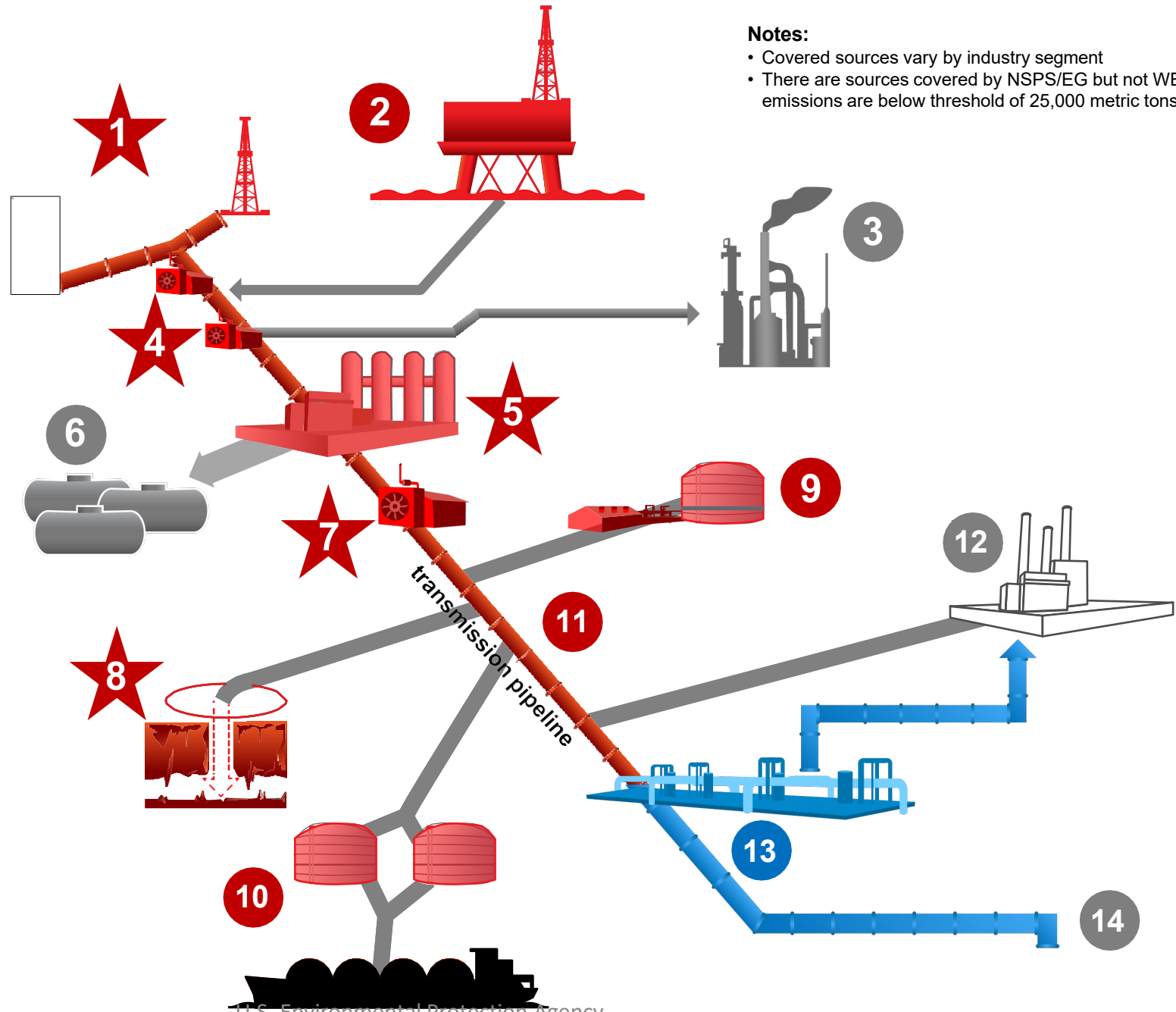
7. Transmission Compressor Stations ★
8. Underground Storage ★
9. Liquefied Natural Gas (LNG) Storage
10. LNG Import-Export Equipment
11. Natural Gas Transmission Pipeline

Distribution

12. Large End Users
13. Natural Gas Distribution
14. Natural Gas & Petroleum Supply to Small End Users

Notes:

- Covered sources vary by industry segment
- There are sources covered by NSPS/EG but not WEC where facility emissions are below threshold of 25,000 metric tons CO₂e



- GHGRP Subpart W industry segments subject to Waste Emissions Charge
- GHGRP Subpart W industry segments not subject to Waste Emissions Charge
- ★ Industry segments subject to final NSPS OOOOb and EG OOOOc

GHGRP Subpart W Revisions

- IRA directed EPA to revise GHGRP regulations for petroleum and natural gas systems facilities (Subpart W) by August 2024 to ensure that reporting is **based on empirical data** and accurately reflects total methane emissions.
- Proposed revisions include:
 - Additional direct measurement calculation methodologies, including both required measurements for some highly variable sources and some optional direct measurement methodologies
 - Revisions to existing methodologies to require measurement of some related parameters, incorporate the latest data or improve the accuracy of emission calculations
- On August 1, 2023, EPA proposed changes to Subpart W to meet Congress' mandate and expects to finalize the revisions prior to the statutory deadline.



GHGRP Subpart W Revisions

- EPA is also proposing to **add emission sources** to ensure that Subpart W **reflects total methane emissions** from the applicable facilities, including:
 - Adding entirely new sources (e.g., ‘Other large release events and incorporation of data from remote sensing’)
 - The proposed Other Large Release Events source category is aligned with the NSPS/EG Super Emitter Program.
 - Expanding reporting of existing sources to all relevant segments
- EPA is also proposing revisions to **improve data verification and transparency**, including increasing the granularity of reporting for Onshore Petroleum & Natural Gas Production and Gathering & Boosting
 - Many data elements are proposed to be reported at the well, well site or gathering boosting site level
- EPA proposed that the changes to Subpart W would go into effect for the 2025 reporting year.



Waste Emissions Charge

Overview of Waste Emissions Charge in the IRA

- IRA establishes a waste emissions charge (WEC) for methane emissions from applicable facilities that report to Subpart W and that exceed **statutorily-specified waste emissions thresholds**.
- Thresholds are calculated using segment-specific **methane intensity values** set by Congress.

Industry Segment	Industry Segment-Specific Methane Intensity
Onshore petroleum and natural gas production	0.20 percent of natural gas sent to sale from facility; or 10 metric tons of methane per million barrels of oil sent to sale from facility, if facility sends no natural gas to sale
Offshore petroleum and natural gas production	
Onshore petroleum and natural gas gathering and boosting	0.05 percent of natural gas sent to sale from or through facility
Onshore natural gas processing	
Onshore natural gas transmission compression	0.11 percent of natural gas sent to sale from or through facility
Onshore natural gas transmission pipeline	
Underground natural gas storage	
LNG import and export equipment	0.05 percent of natural gas sent to sale from or through facility
LNG storage	

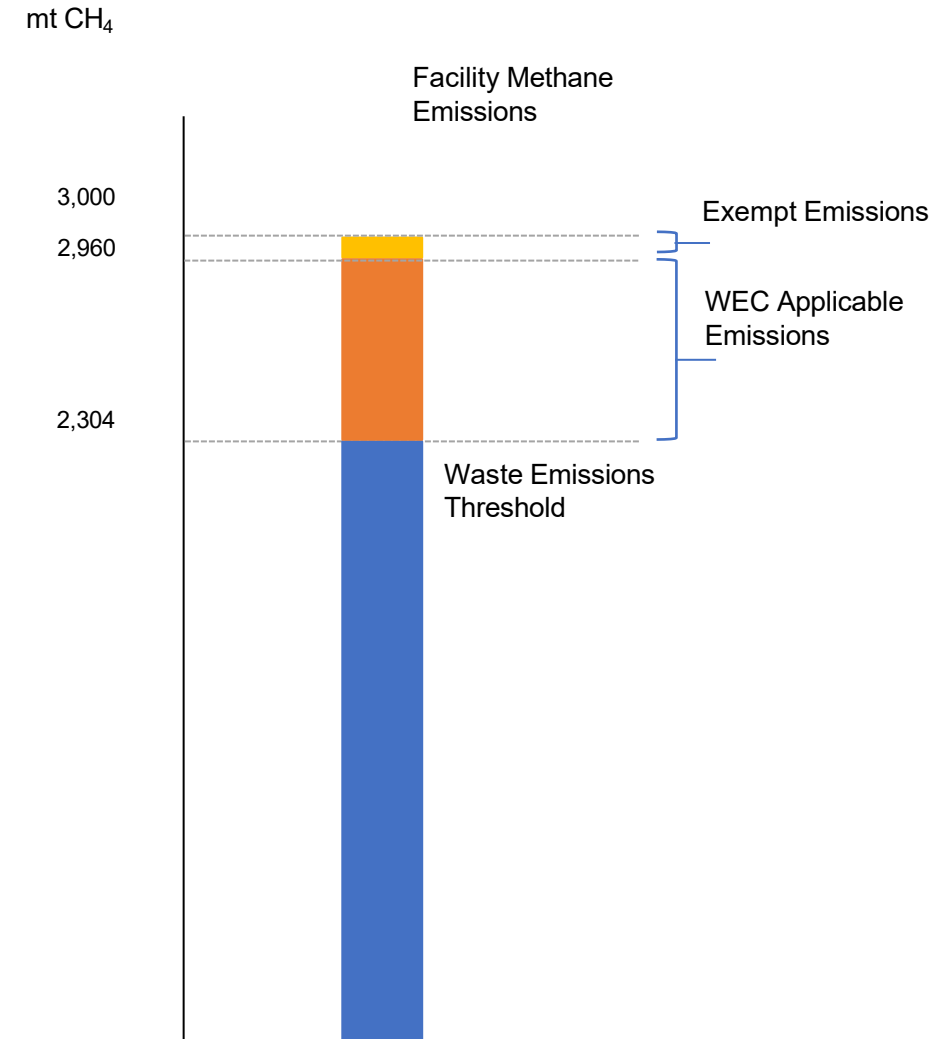
WEC Applicability

- Subpart W facilities are subject to the WEC if they meet two criteria:
 1. Facility emits more than 25,000 metric tons of carbon dioxide equivalent per year to Subpart W
 2. Facility is in one of nine Subpart W industry segments (all except distribution)
- If a facility meets both of these criteria, it is a **WEC applicable facility** and is subject to reporting requirements under the WEC rule, and emissions exceeding WEC thresholds could be subject to charge.
- Waste emissions charge starts at \$900 per metric ton for 2024 emissions and increases to \$1,200 for 2025 and \$1,500 for 2026 and each year thereafter.



WEC Calculation and Exemptions

- The Waste Emissions Charge is only applicable to the methane emissions that exceed the waste emissions threshold.
- Allows for netting of emissions for WEC-applicable facilities under common ownership or control.
- Includes exemptions for:
 - facilities in compliance with regulations under NSPS/EG, provided statutorily-dictated conditions are met;
 - emissions caused by unreasonable delay in environmental permitting of gathering or transmission infrastructure;
 - and emissions from wells plugged in the previous year.
- Subpart W emissions and throughput data are used to calculate the WEC.



Stay Informed on the Methane Emissions Reduction Program

For more information, visit our website:

www.epa.gov/merp



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[Waste Emissions Charge](#)

[Revisions to GHGRP Subpart W](#)

Methane Emissions Reduction Program

On this page:

- [Upcoming Events](#)
- [Past Program News](#)
- [Additional Resources](#)

The Inflation Reduction Act provides new authorities under Section 136 of the Clean Air Act to reduce methane emissions from the petroleum and natural gas sector through the creation of the Methane Emissions Reduction Program. This program will help reduce emissions of methane and other greenhouse gas (GHGs) from the oil and gas sector and will have the co-benefit of reducing non-GHG emissions such as volatile organic compounds and hazardous air pollutants. In keeping with the Administration's [Justice40 Initiative](#), the program will

Latest Announcements

- February 9, 2024 – [EPA and DOE Announce Intent to Fund Projects to Reduce Methane Emissions From the Oil and Natural Gas Sectors](#)
- January 12, 2024 – [Biden-Harris Administration](#)

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Methane Emissions Reduction Program

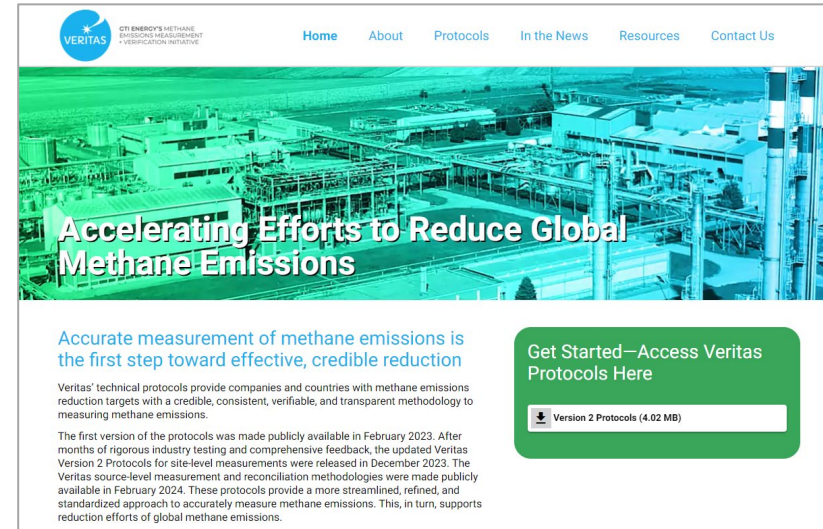
Thank you

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Thank You!

- **Srijana Rai**
Principal Analyst, GTI Energy
srai@gti.energy
- **Erin Blanton**
Vice President, Zero Emissions Systems,
GTI Energy
eblanton@gti.energy



VERITAS GTI ENERGY'S METHANE EMISSIONS MEASUREMENT + VERIFICATION INITIATIVE

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Accelerating Efforts to Reduce Global Methane Emissions

Accurate measurement of methane emissions is the first step toward effective, credible reduction

Veritas' technical protocols provide companies and countries with methane emissions reduction targets with a credible, consistent, verifiable, and transparent methodology to measuring methane emissions.

The first version of the protocols was made publicly available in February 2023. After months of rigorous industry testing and comprehensive feedback, the updated Veritas Version 2 Protocols for site-level measurements were released in December 2023. The Veritas source-level measurement and reconciliation methodologies were made publicly available in February 2024. These protocols provide a more streamlined, refined, and standardized approach to accurately measure methane emissions. This, in turn, supports reduction efforts of global methane emissions.

Get Started—Access Veritas Protocols Here

Version 2 Protocols (4.02 MB)

Visit veritas.gti.energy