



# WASTE EMISSIONS CHARGE FOR PETROLEUM AND NATURAL GAS SYSTEMS: PROPOSED RULE

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# EPA Oil and Gas Methane Actions

- The proposed Waste Emissions Charge (WEC) is part of a complementary suite of EPA actions to reduce methane emissions from the oil and natural gas sector.
- On December 2, 2023, EPA released final New Source Performance Standards and Emissions Guidelines (NSPS/EG) to reduce methane and other harmful pollution from new and existing oil and natural gas operations.
  - After certain criteria are met, facilities in compliance with the NSPS/EG may be exempt from the WEC
- EPA is working to implement the three-part framework of the Inflation Reduction Act's Methane Emissions Reduction Program:
  - EPA is partnering with DOE to provide over \$1 billion in financial and technical assistance to accelerate the transition to no- and low- emitting oil and gas technologies, including funds for activities associated with low-producing conventional wells; supporting methane monitoring; and reducing pollution from oil and gas operations
  - On August 1, 2023, as directed by Congress, EPA proposed revisions to subpart W of the Greenhouse Gas Reporting Program to ensure that reporting of methane emissions from oil and natural gas operations is based on empirical data and accurately reflects emissions
  - EPA proposed a regulation to implement the Waste Emissions Charge (subject of this webinar)

# Overview of Waste Emissions Charge in the IRA

## The Inflation Reduction Act provides new authorities under Section 136 of the Clean Air Act to reduce methane emissions

- Establishes a waste emissions charge for methane emissions from applicable facilities that report more than 25,000 metric tons of CO<sub>2</sub> equivalent per year to the Greenhouse Gas Reporting Program (GHGRP) Petroleum and Natural Gas Systems source category (subpart W) and that exceed statutorily-specified waste emissions thresholds.
- Thresholds are calculated using segment-specific methane intensity values set by Congress (e.g., for production, 0.20 percent of natural gas sent to sale from facility).
- 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. The charge only applies to the subset of emissions that exceed the waste emissions thresholds.
- Allows for netting of emissions for WEC-applicable facilities under common ownership or control.
- Includes exemptions for: facilities in compliance with regulations under CAA 111(b) and (d), 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.
- EPA directed to revise GHGRP subpart W regulations by August 2024.

# Subpart W

- In the Inflation Reduction Act, Congress directed EPA to revise subpart W by August 16, 2024, to allow facilities to submit empirical data to ensure emissions are accurately reported.
  - Subpart W emissions and throughput data are the primary inputs to WEC calculations
- On August 1, 2023, EPA proposed changes to subpart W to meet Congress' mandate and expects to finalize the revisions prior to the 2024 statutory deadline.
- EPA proposed that the changes to subpart W would go into effect for the 2025 reporting year. EPA is currently reviewing comments received on the subpart W proposal, including those supporting the optional use of empirical data for the 2024 reporting year for the purpose of calculating the 2024 WEC.
- As proposed, the WEC for calendar year 2024 would be based on emissions reported under the subpart W methodologies in effect as of January 1, 2024.
- As proposed, beginning with emissions in calendar year 2025, industry would calculate their subpart W emissions and WEC obligation based on the methodologies in the final subpart W rule.

# WEC Calculation: Determining 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)

Onshore Petroleum and Natural Gas Production	Onshore Natural Gas Processing	Underground Natural Gas Storage
Offshore Petroleum and Natural Gas Production	Onshore Natural Gas Transmission Compression	Liquified Natural Gas (LNG) Import and Export Equipment
Onshore Petroleum and Natural Gas Gathering and Boosting	Onshore Natural Gas Transmission Pipeline	LNG Storage

- 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.

# WEC Calculation: Waste Emissions Threshold

The Waste Emissions Charge is only applicable to the methane emissions that exceed the waste emissions threshold

- The waste emissions threshold for each facility is calculated directly in metric tons of methane:
  - Waste emissions threshold (mt) = Reported throughput (Mscf) x segment-specific intensity specified in statute (% of throughput) x density of CH<sub>4</sub> (0.0192 mt/Mscf)
- Calculation yields the metric tons of methane equivalent to the segment-specific methane intensity based on the facility's unique throughput (i.e., the mass equivalent of the volume of methane that is equal to the methane intensity value)
- Approach does not require any information on the density or constituents of natural gas throughput.
- For production facilities without natural gas sales, the oil intensity metric is applied to calculate the waste emissions threshold:
  - Waste emissions threshold (mt) = Reported throughput (bbl) x (10 (mt) / 1,000,000 (bbl))

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	
Onshore natural gas transmission pipeline	0.11 percent of natural gas sent to sale from or through facility
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 Calculation: WEC Applicable Emissions

- To determine if a facility's methane emissions exceed its waste emissions threshold, the waste emissions threshold is subtracted from **facility methane emissions**, the methane reported under subpart W. This results in **facility applicable emissions**, which are positive if emissions exceed the waste emissions threshold and negative if emissions are below the waste emissions threshold.
  - Facility Applicable Emissions (mt) = Facility Methane Emissions (mt) – Waste Emissions Threshold (mt)
- If an onshore or offshore production facility has emissions eligible for the unreasonable delay exemption or plugged well exemption, those emissions are subtracted from facility applicable emissions to calculate **WEC applicable emissions**. WEC applicable emissions are the final amount of facility methane emissions above or below the waste emissions threshold.
  - WEC Applicable Emissions (mt) = Facility Applicable Emissions – Eligible Exempt Emissions (mt)
- For facilities without any eligible exempt emissions, facility applicable emissions would equal WEC applicable emissions.
- **Facilities that qualify for the regulatory compliance exemption would have zero WEC applicable emissions.**

# WEC Calculation: Net WEC Emissions and WEC Obligation

- If an owner or operator has multiple facilities under common ownership or control, WEC applicable emissions for each facility under common ownership or control are summed to calculate **net WEC emissions**.
- If net emissions are positive, this value is multiplied by the annual \$/metric ton value to calculate the total WEC owed (e.g., \$900/metric ton for 2024), or **the WEC obligation**. If net emissions are less than or equal to zero, the owner or operator does not have a WEC obligation.
- For owners or operators with one facility under common ownership or control, net WEC emissions are equal to that facility's WEC applicable emissions.
- Because subpart W facilities that do not report more than 25,000 mt CO<sub>2</sub>e under subpart W would not be WEC applicable facilities, these facilities would not be eligible to participate in netting.

## Netting

- EPA is proposing that the **WEC obligated party**, or the entity able to net emissions across facilities, would be the facility owner or operator as of December 31, as reported under both the WEC rule and subpart W.
- WEC applicable emissions from facilities under common ownership or control of a WEC obligated party **within and across industry segments** may be netted.

# Exemption: Plugged Wells

- Exempts emissions from wells permanently shut-in and plugged in accordance with all applicable closure requirements.
- Exempted emissions are limited to wellhead emissions (i.e., leaks, liquids unloading, workovers).
- EPA proposes that two criteria must be met for emissions to be exempted:
  1. Total facility methane emissions must exceed the waste emissions threshold
  2. The well was permanently shut-in and plugged in the reporting year in accordance with all applicable closure requirements
- EPA proposed reporting elements in the August 2023 subpart W revisions proposal that would go into effect for the 2024 reporting year to facilitate implementation of the plugged well exemption for 2024 emissions.

# Exemption: Unreasonable Delay in Environmental Permitting

- Applicable to emissions in the onshore and offshore production segments that result from unreasonable delay, as determined by the Administrator, in environmental permitting of gathering or transmission infrastructure necessary for offtake of increased volume as a result of methane emissions mitigation implementation.
- EPA proposes that 4 criteria must be met for emissions to be exempted:
  1. Total facility methane emissions must exceed the waste emissions threshold
  2. The production facility seeking the exemption and the gathering or transmission entity must not have contributed to the delay in permitting
  3. Exempted emissions are limited to those from flaring occurring in compliance with relevant regulations
  4. A set period of time must have passed from the time of a complete permit application (EPA proposes a range of 30 to 42 months, and requests comment on the specific period of time that would be appropriate)

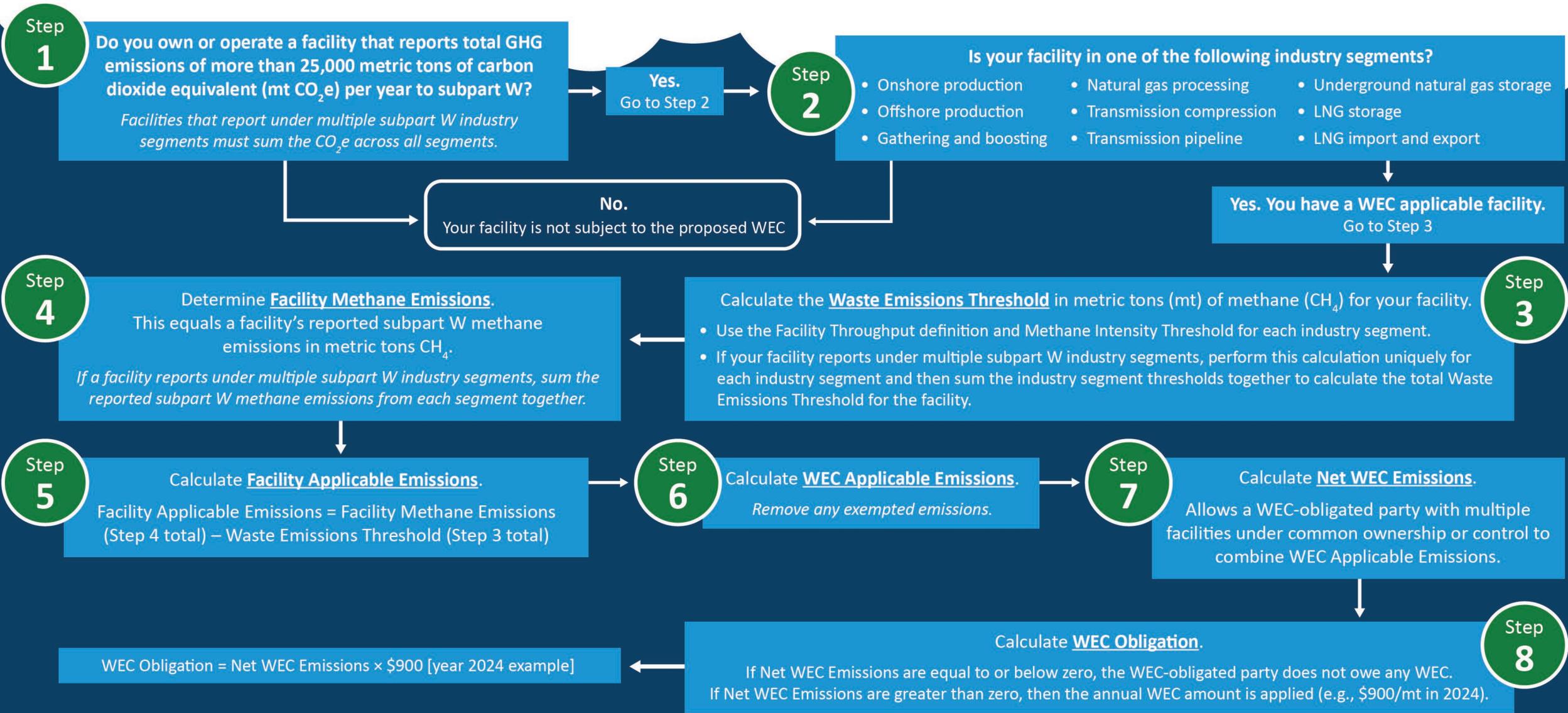
# Exemption: Regulatory Compliance

Exempts certain WEC facilities whose emissions exceed the waste emissions thresholds if they are in compliance with Oil & Gas sector NSPS/EG methane emissions requirements.

- Congress requires two Administrator determinations before the exemption becomes available:
  - **“All state” determination:** Methane emissions standards and plans pursuant to CAA § 111(b) and (d) “have been approved and are in effect in all states.”
  - **Equivalency determination:** Compliance with the final CAA § 111 NSPS 0000b and EG 0000c requirements “will result in equivalent or greater emissions reductions as would be achieved” by the November 2021 NSPS/EG proposal, had that proposal been finalized and implemented.
- EPA proposes that both determinations would be made through a single administrative action after all plans pursuant to CAA § 111(d) are approved and in effect.
- Exemption would become available to facilities in the year in which the Administrator determinations are made and would apply to the entire calendar year.
- Exemption would be available to any WEC applicable facility (i.e., subpart W facility) that contains a CAA section 111(b) or (d) facility. All CAA section 111(b) and (d) facilities contained within a WEC applicable facility must be in compliance with their respective methane requirements for the WEC applicable facility to be eligible for the regulatory compliance exemption.
- WEC applicable emissions for facilities that qualify for the regulatory compliance exemption would be zero, and facilities with WEC applicable emissions less than or equal to zero would not be eligible for the exemption.

# Steps for Determining Waste Emissions Charge Applicability and Obligation

The steps below summarize how the Waste Emissions Charge (WEC) is calculated for WEC-obligated parties.



# Reporting and Payments

- Owners or operators would be required to **submit a WEC filing by March 31** covering the previous reporting year (i.e., calendar year).
  - Facility owner or operator as of December 31 of the reporting year would be the WEC obligated party and responsible for any WEC for the entire reporting year
  - EPA is requesting comment on whether the filing deadline should be extended for the first reporting year.
- The WEC filing would include subpart W data required for WEC calculations (e.g., methane emissions and natural gas throughput), as well as information on facilities under common ownership and control and any applicable exemptions.
- Any **WEC obligation would be required to be paid at the time of the WEC filing.**
- Any final data **resubmissions for the purposes of revising WEC data and WEC obligations would be due by November 1** for the previous reporting year.
  - Additional payments or refunds would be made, as applicable
- To support timely and accurate reporting, EPA is proposing fees for failure to meet WEC reporting requirements and interest on late WEC payments, including any additional WEC obligation that may result from data resubmissions.

# WEC Calculation Example

Industry Segment	Subpart W Total GHG (mt CO <sub>2</sub> e)	Subpart W Methane (mt)	Throughput (Mscf)	Segment Methane Intensity Threshold	Potentially Exempt Emissions (mt)
Onshore Production	165,000	3,000	60,000,000	0.2%	40

Waste emissions threshold = throughput x segment-specific intensity x density of CH<sub>4</sub>

Waste emissions threshold = 60,000,000 Mscf x 0.002 x 0.0192 mt/Mscf

**Waste emissions threshold = 2,304 mt CH<sub>4</sub>**

Facility applicable emissions = facility methane – waste emissions threshold

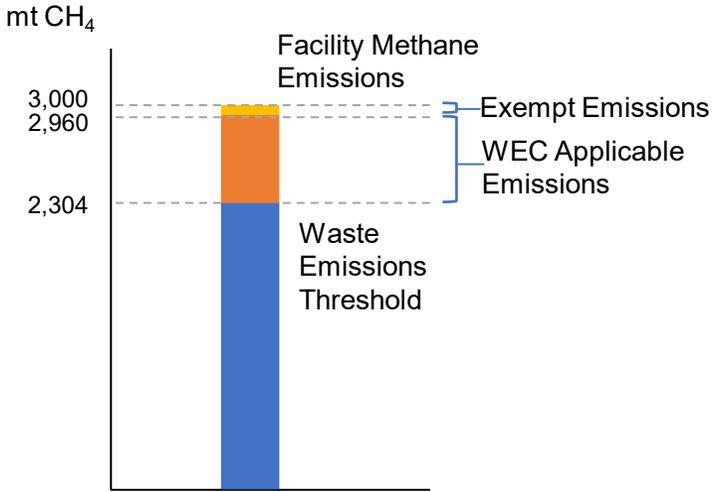
Facility applicable emissions = 3,000 mt CH<sub>4</sub> – 2,304 mt CH<sub>4</sub>

**Facility applicable emissions = 696 mt CH<sub>4</sub>**

WEC applicable emissions = facility applicable emissions – eligible exempt emissions

WEC applicable emissions = 696 mt CH<sub>4</sub> – 40 mt CH<sub>4</sub>

**WEC applicable emissions = 656 mt CH<sub>4</sub>**



WEC obligation = net WEC emissions\* x annual \$/mt charge

WEC obligation = 656 mt CH<sub>4</sub> x \$900/mt

**WEC obligation = \$590,400**

\*in this example the owner or operator has a single facility under common ownership or control, and WEC applicable emissions are equal to net WEC emissions

If the regulatory compliance exemption were available and this facility met all eligibility criteria, WEC applicable emissions would be zero



# WEC Calculation Example

Industry Segment	Subpart W Total GHG (mt CO <sub>2</sub> e)	Subpart W Methane (mt)	Throughput (Mscf)	Segment Methane Intensity Threshold	Potentially Exempt Emissions (mt)
Processing	60,000	300	400,000,000	0.05%	NA

Waste emissions threshold = throughput x segment-specific intensity x density of CH<sub>4</sub>

Waste emissions threshold = 400,000,000 Mscf x 0.0005 x 0.0192 mt/Mscf

**Waste emissions threshold = 3,840 mt CH<sub>4</sub>**

Facility applicable emissions = facility methane – waste emissions threshold

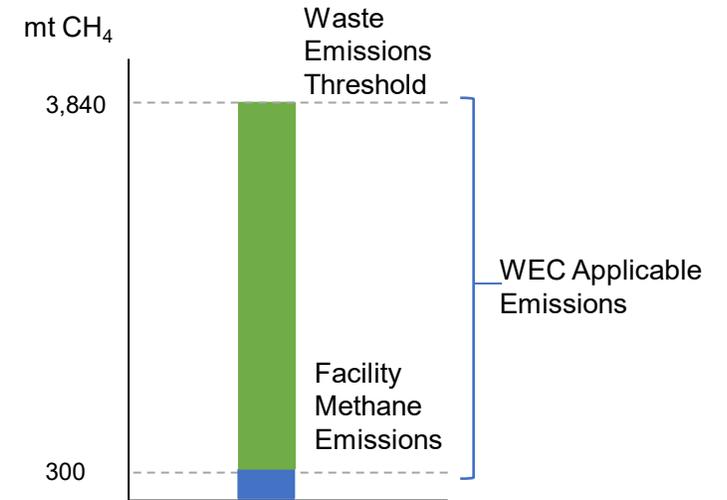
Facility applicable emissions = 300 mt CH<sub>4</sub> – 3,840 mt CH<sub>4</sub>

**Facility applicable emissions = -3,540 mt CH<sub>4</sub>**

WEC applicable emissions = facility applicable emissions – eligible exempt emissions

WEC applicable emissions = -3,540 mt CH<sub>4</sub> – 0 mt CH<sub>4</sub>

**WEC applicable emissions = -3,540 mt CH<sub>4</sub>**



WEC obligation = net WEC emissions\* x annual \$/mt charge

WEC obligation = 0 mt CH<sub>4</sub> x \$900/mt

**WEC obligation = \$0**

\*in this example the owner or operator has a single facility under common ownership or control, and WEC applicable emissions are equal to net WEC emissions

Because WEC applicable emissions are not positive, this facility would not qualify for the regulatory compliance exemption.

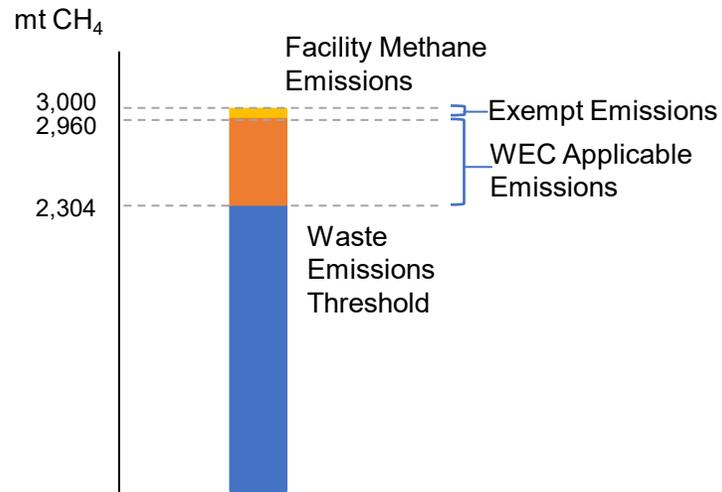


# Netting Example

If facilities 1 and 2 are under common ownership or control of a WEC obligated party, WEC applicable emissions are summed to calculate net WEC emissions. Emissions may be netted within and across industry segments.

## Facility 1

WEC Applicable Emissions: 656 mt CH<sub>4</sub>

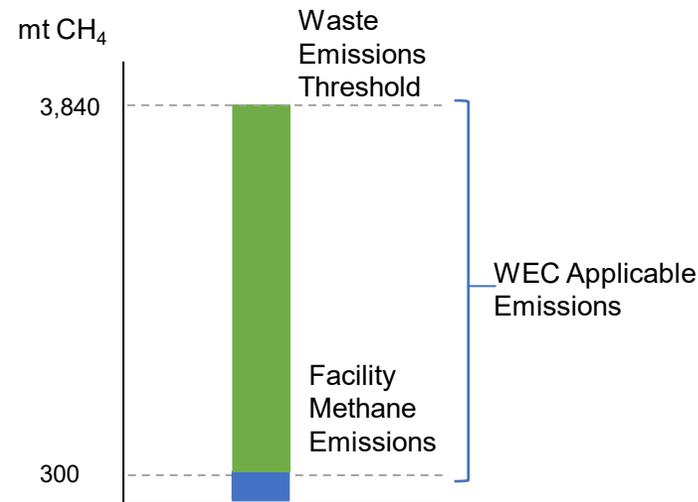


Onshore  
Production  
Facility

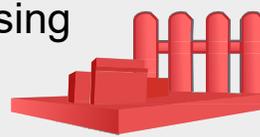


## Facility 2

WEC Applicable Emissions: -3,540 mt CH<sub>4</sub>

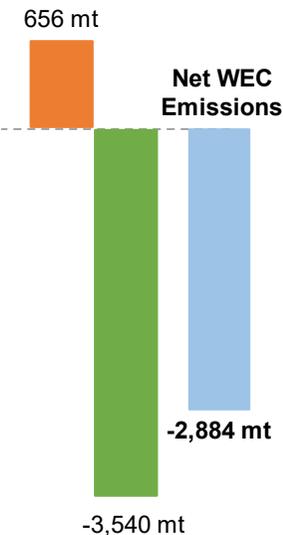


Processing  
Facility



## Net WEC Emissions

$$656 + -3,540 = -2,884$$



Negative WEC applicable emissions from facility 2 net out positive WEC applicable emissions from facility 1. Net WEC emissions are negative, and the WEC obligated party does not owe a WEC obligation.

# EPA Oil and Natural Gas Sector Methane Anticipated Timeline

		2023	2024	2025	2026	2027	2028	2029
CAA Section 111(b) and (d) rules	New Source Pollution Standards (commenced construction/modification after 12/2022)	Final Rule signed Dec. 2023	Effective date (60 days from publication with exceptions for certain equipment)					
	Emissions Guidelines (commenced construction on or before 12/2022)				State plans due 2 years after final rule publication (expected early 2026)	EPA acts on state plans mid-2027 (12 months once determined complete)	EPA issues federal plan(s) if necessary (mid-2028)	Sources must be in compliance (36 months after state plans submitted; expected early 2029)
Greenhouse Gas Reporting Program Subpart W		Proposed Aug. 2023	Spring: Rule finalized	Effective on January 1, 2025				
Waste Emissions Charge			<ul style="list-style-type: none"> <li>Proposed Rule signed Jan. 2024</li> <li>Final Rule: Fall/Winter 2024</li> <li>Unreasonable delay and plugged well exemptions implemented</li> </ul>	Proposed first collection of WEC (for 2024 reporting year) on March 31, 2025		Earliest year for regulatory compliance exemption availability, based on proposal		
EPA & DOE Financial and Technical Assistance		\$350M Conditional Awards to 14 states to support industry efforts to cut methane from low-producing wells (Dec. 2023)	Remaining funds awarded for Oil and Gas Methane Monitoring and Mitigation (Summer-Fall 2024)					
				Technical Assistance				

## 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

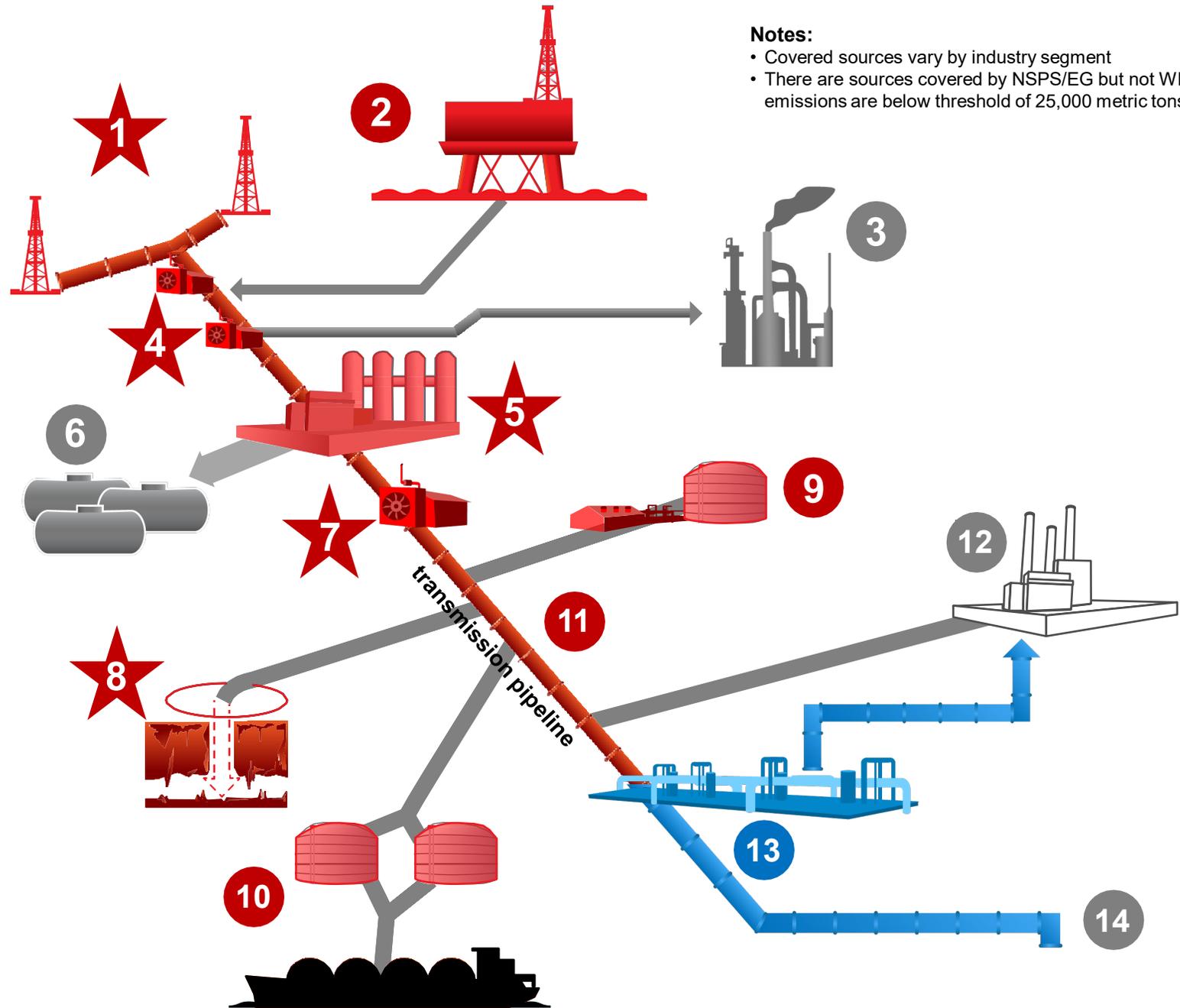
7. Transmission Compressor Stations ★
8. Underground Storage ★
9. Liquefied Natural Gas (LNG) Storage
10. LNG Import-Export Equipment
11. Natural Gas Transmission Pipeline

## 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 CO<sub>2</sub>e



- 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

# Key Terms

- **Facility Applicable Emissions:** Annual methane emissions associated with a WEC applicable facility that are either equal to, below, or exceeding the waste emissions threshold for the WEC applicable facility prior to consideration of any applicable exemptions.
- **Industry Segment Specific Methane Intensity Values:** The values established by Congress in CAA section 136(f), representing methane emissions as a percentage of natural gas throughput (or methane emissions per barrel of oil sent to sale for facilities with no natural gas throughput).
- **Net WEC Emissions:** The sum of WEC applicable emissions from all facilities under common ownership or control of a WEC obligated party.
- **Waste Emissions Threshold:** The metric tons of methane emissions calculated by multiplying WEC applicable facility throughput by the industry segment-specific methane intensity thresholds established in CAA 136(f) and the density of methane (0.0192 metric ton per thousand standard cubic feet).
- **WEC Applicable Emissions:** Annual methane emissions associated with a WEC applicable facility that are either equal to, below, or exceeding the waste emissions threshold for the WEC applicable facility after consideration of any applicable exemptions.
- **WEC Applicable Facility:** A facility that is 1) within one or more of the following industry segments, as defined in subpart W: Offshore petroleum and natural gas production, onshore petroleum and natural gas production, onshore natural gas gathering and boosting, onshore natural gas processing, onshore natural gas transmission compression, onshore natural gas transmission pipeline, underground natural gas storage, liquified natural gas import and export equipment, liquified natural gas storage, and 2) for which the owner or operator reports GHG emissions under subpart W of more than 25,000 metric tons CO<sub>2</sub>e.
- **WEC Obligated Party:** The owner or operator of a WEC applicable facility and the entity responsible for any WEC obligation.
- **WEC Obligation:** The charge owed by a WEC obligated party.