



Climate, Air Quality and Permitting Proposals For the Oil and Natural Gas Industry

September 2015



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Suite of Commonsense Measures

Will help combat climate change

Will reduce GHG emissions, specifically methane

Will reduce air pollution that harms public health

Will reduce emissions of smog-forming VOCs

Will provide certainty for industry and permitting authorities about Clean Air Act permitting requirements



Proposed Actions – At a Glance

2012 New Source Performance Standards

- Updates that would set methane and VOC requirements for additional new and modified sources in the oil and gas industry

VOC emissions

- Draft Control Technique Guidelines (CTG) for reducing emissions from existing oil and natural gas sources in certain ozone nonattainment areas and states in the Ozone Transport Region

Air permitting rules

- Proposed updates to clarify agency's air rules as they apply to the oil and natural gas industry
- Proposed Federal Implementation Plan to implement minor New Source Review permitting in Indian country

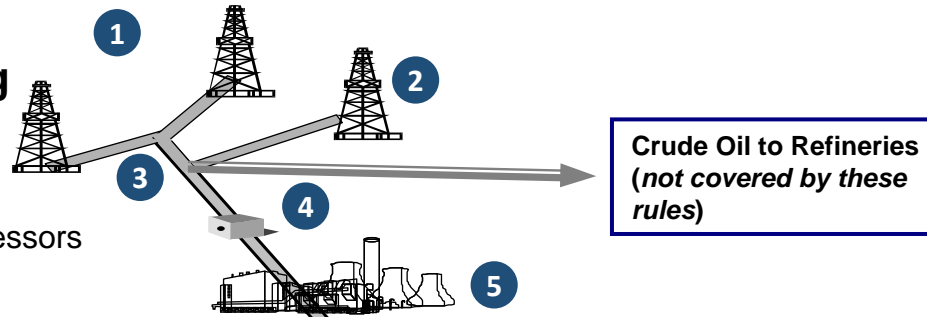


The Oil and Natural Gas Industry

Oil and natural gas systems encompass wells, gas gathering and processing facilities, storage, and transmission and distribution pipelines..

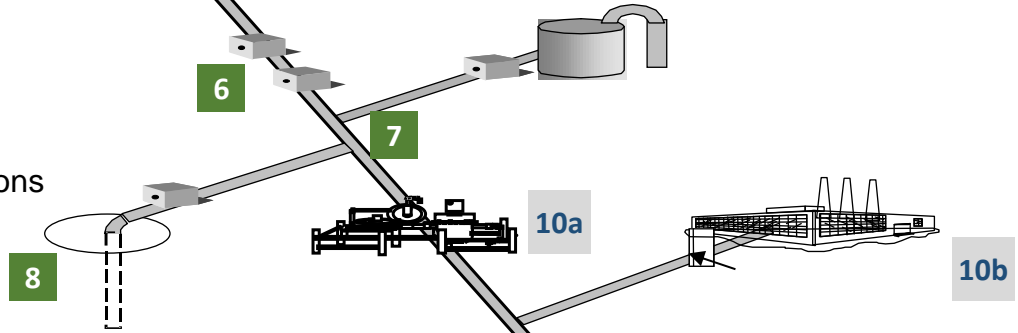
● Production & Processing

1. Drilling and Well Completion
2. Producing Wells
3. Gathering Lines
4. Gathering and Boosting Compressors
5. Gas Processing Plant



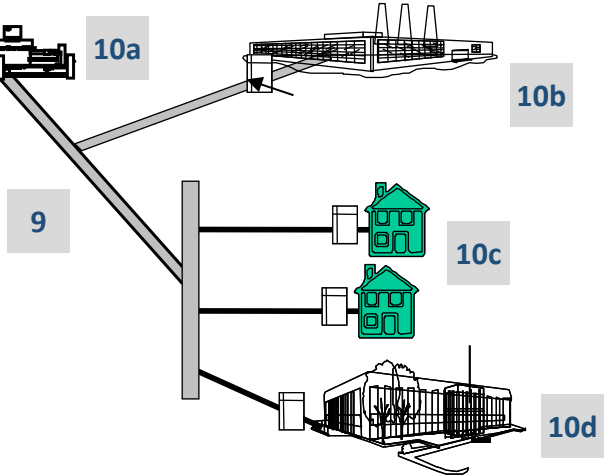
■ Natural Gas Transmission & Storage

6. Transmission Compressor Stations
7. Transmission Pipeline
8. Underground Storage



■ Distribution (not covered by these rules)

9. Distribution Mains
10. Regulators and Meters for:
 - a. City Gate
 - b. Large Volume Customers
 - c. Residential Customers
 - d. Commercial Customer





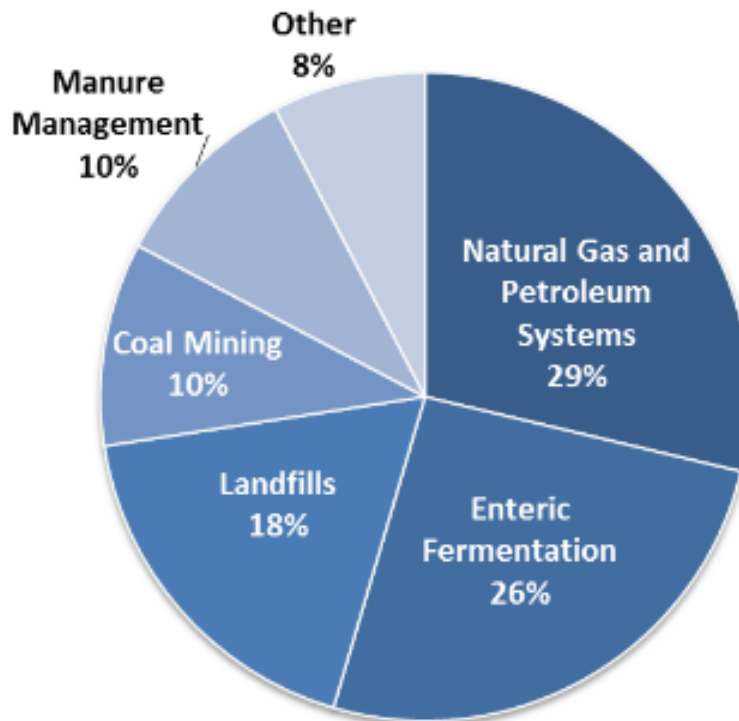
Methane

Methane is a **potent greenhouse gas** with a global warming potential more than 25 times greater than that of carbon dioxide.

Methane is the **second most prevalent greenhouse gas emitted** in the United States from human activities, and nearly 30 percent of those emissions come from oil production and the production, transmission and distribution of natural gas.

While **methane emissions** from the oil and gas sector have declined 16 percent since 1990, they are **projected to increase significantly over the next decade without additional actions to lower them.**

U.S. Methane Emissions, By Source



Note: All emission estimates from the *Inventory of U.S. Greenhouse Gas Emissions and Sinks: 1990–2013*.



Proposed Actions

Update to the 2012 New Source Performance Standards

Building on the 2012 New Source Performance Standards (NSPS) for VOC emissions for the oil and natural gas industry, EPA's proposed updates would:

- Require that the industry reduce methane
- Add emissions reduction requirements for sources of methane and VOC pollution that were not covered in the 2012 rules. These include requirements that owners/operators:
 - Capture natural gas from the completion of hydraulically fractured wells
 - Natural gas wells were covered in the 2012 rule
 - Green completion/reduced emissions completion required; exemptions for some types of wells (those would have to reduce emissions using combustion)
 - Find and repair leaks (fugitive emissions)
 - Limit emissions from new and modified pneumatic pumps
 - Expand coverage to limit emissions from several types of equipment used at natural gas transmission compressor stations and gas storage facilities
 - Includes compressors and pneumatic controllers that were not covered by the 2012 rule

Sources already subject to the 2012 NSPS requirements for VOC reductions that also would be covered by the proposed 2015 methane requirements would not have to install additional controls, because the controls to reduce VOCs reduce both pollutants.

**Sources covered by the 2012 NSPS for VOCs and
the 2015 Proposed NSPS for Methane and VOCs, by site**

Location and Equipment/Process Covered	Required to Reduce Emissions Under EPA Rules	Rules that Apply		
		2012 NSPS for VOCs*	2015 proposed NSPS for methane	2015 proposed NSPS for VOCs
Natural Gas Well Sites				
Completions of hydraulically fractured wells	✓	•	•	
Compressors	<i>Not covered</i>			
Equipment leaks	✓		•	•
Pneumatic controllers	✓	•	•	
Pneumatic pumps	✓		•	•
Storage tanks	✓	•		
Oil Well Sites				
Completions of hydraulically fractured wells	✓		•	•
Compressors	<i>Not covered</i>			
Equipment leaks	✓		•	•
Pneumatic controllers	✓	•	•	
Pneumatic pumps	✓		•	•
Storage tanks	✓	•		
Production Gathering and Boosting Stations				
Compressors	✓	•	•	
Equipment leaks	✓		•	•
Pneumatic controllers	✓	•	•	
Pneumatic pumps	✓		•	•
Storage tanks	✓	•		
Natural Gas Processing Plants				
Compressors	✓	•	•	
Equipment leaks	✓	•	•	
Pneumatic controllers	✓	•	•	
Pneumatic pumps	✓		•	•
Storage tanks	✓	•		
Natural Gas Compressor Stations (Transmission & Storage)				
Compressors	✓		•	•
Equipment leaks	✓		•	•
Pneumatic controllers	✓		•	•
Pneumatic pumps	✓		•	•
Storage tanks	✓	•		

* Note: Sources already subject to the 2012 NSPS requirements for VOC reductions that also would be covered by the proposed 2015 methane requirements would not have to install additional controls, because the controls to reduce VOCs reduce both pollutants



Proposed Actions

Draft Control Techniques Guidelines

Draft Control Techniques Guidelines (CTG) would reduce VOC emissions from existing equipment and processes in the oil and natural gas industry.

✓	<p>CTG provide recommendations for state/local air agencies to assist them in determining RACT</p> <ul style="list-style-type: none">• Are not regulations and do not impose legal requirements on sources• States may use different technology and approaches, subject to EPA approval• Other approaches must achieve required pollution reductions
✓	<p>Under the Clean Air Act, RACT applies in ozone nonattainment areas classified as “Moderate” and above, and throughout the Ozone Transport Region</p>
✓	<p>Draft guidelines include EPA’s RACT recommendations for storage tanks, pneumatic controllers, pneumatic pumps, centrifugal and reciprocating compressors, equipment leaks from natural gas processing plants, and fugitive emissions</p>
✓	<p>Draft includes detailed information on the cost of available controls to assist states in determining RACT for their sources. Also includes model rule language</p>



Proposed Actions

Air Permitting Rules

EPA is issuing two proposals to clarify permitting requirements in the states and in Indian country and make them more efficient.

1. Source Determination Rule:

Seeks broad public feedback on options for determining when multiple pieces of equipment and activities in oil and gas extraction and production must be deemed a single source that is subject to requirements under Clean Air Act air permitting programs.

- Prevention of Significant Deterioration and Nonattainment New Source Review preconstruction permitting programs
 - Title V Operating Permits program.
- Proposal seeks public comment on two options for the definition of the term “adjacent:”
 - Proximity-based – equipment or activities would be considered adjacent if they are located on the same site or are on sites within ¼ mile of each other
 - Proximity or function-based – equipment or activities would be considered adjacent if they are near each other (1/4 mile) or related by function (such as connected by a pipeline)
 - Would apply only to onshore operations; would not apply offshore
 - Proposal only applies to sources engaged in oil and natural gas extraction/production



Proposed Actions

Air Permitting Rules

2. Proposed *federal implementation plan (FIP)*:

Would implement the Minor New Source Review Program in Indian Country for oil and natural gas production. Would limit emissions of harmful air pollution while making the preconstruction permitting process more efficient for this rapidly growing industry.

- The proposed FIP would be used instead of minor New Source Review (NSR) preconstruction permits in Indian country
- It would incorporate emissions limits and other requirements from six federal air standards to ensure air quality is protected. These include:
 - The 2015 proposed updates to the New Source Performance Standards for the oil and natural gas industry
 - Standards for equipment, including stationary engines, boilers and liquid storage tanks
- The FIP would apply:
 - Throughout reservation areas in Indian country and
 - In any other areas of Indian country for which a tribe or EPA has demonstrated that the tribe has jurisdiction.
- But only in areas designated *attainment, attainment/unclassifiable or unclassifiable* for a National Ambient Air Quality Standard
- Requirements in the FIP would apply to all new and modified true minor sources in the production segment of the oil and natural gas industry



Emission Reductions – Benefits and Costs

EPA's Regulatory Impact Analysis of— *illustrative benefits and costs for proposed NSPS*

2025

- Would reduce and estimated 340,000 to 400,000 short tons of methane (*the equivalent of reducing 7.7 to 9 million metric tons of carbon dioxide*)
- EPA estimates the proposal will have climate benefits of \$460 million to \$550 million, which outweigh the costs of \$320 to \$420 million.
- Would yield estimated net climate benefits of \$120 to \$150 million
- Also expected to reduce 170,000 to 180,000 tons of ozone-forming VOCs, along with 1,900 to 2,500 tons of air toxics (*such as benzene, toluene, ethylbenzene and xylene*).
 - EPA was not able to quantify the benefits of these reductions

EPA did not conduct an RIA for the Control Techniques Guidelines, because CTG are not regulations; they are RACT recommendations for states. The agency estimates that the CTG would reduce about 82,000 tons of VOCs a year, if affected states were to implement the recommendations as outlined in the guidelines.



Proposed Standards - Timeline

March 2014: The President's Climate Action Plan: Strategy to Reduce Methane Emissions directed EPA to determine how best to pursue methane reductions from the oil and gas sector

April 2014: As part of the Methane Strategy, EPA issued a series of technical white papers, focusing on emissions and mitigation techniques that targeted methane and VOCs

January 2015: EPA and the Administration announced a strategy to for reducing methane and VOCs from the oil and gas sector

March-May, 2015: Sought input from state and local air agencies and tribes that volunteered to participate in discussions

August 18, 2015: Proposed standards, FIP and draft Control Techniques Guidelines (CTG) announced

September 23 and 29, 2015: Public hearings scheduled in Denver, Dallas and Pittsburgh

2016: Issue final rules and final CTG





Proposed Methane Challenge Program - Structure

- Methane Challenge expands Natural Gas STAR
 - Under Natural Gas STAR, companies make general commitments and progress is tracked at program level
 - Specific, ambitious commitments
 - Transparent reporting through Subpart W of the Greenhouse Gas Reporting Program (with supplemental, voluntary reporting)
 - Company-level recognition of commitments and progress
- To enhance flexibility, propose to offer two commitment options:
 - Best Management Practice (BMP) Commitment
 - One Future Emissions Intensity Commitment
- Companies can select the option that best fits with their capabilities and corporate priorities to reduce methane emissions
- Program would cover onshore oil production and whole value chain from onshore production through distribution of natural gas



Proposed Methane Challenge Program – Next Steps

- EPA will be releasing documents that provide technical details of sources and proposed BMPs
- Stakeholders can provide feedback in two different ways:
 - Submit your feedback online at www.epa.gov/gasstar/methanechallenge/
 - Send feedback by email to methanechallenge@tetrattech.com.
- Interested stakeholders can schedule a meeting with Carey Bylin at (202) 343-9669 or by email at bylin.carey@epa.gov
- Please provide feedback by October 13, 2015
- EPA plans to finalize the Program later in the Fall and launch with founding partners by the end of 2015

<http://www.epa.gov/gasstar/methanechallenge/tu>



Resources

EPA's commitment

For information on these **proposed actions and instructions on submitting comments**, visit <http://www.epa.gov/airquality/oilandgas/actions.html>

To **register to speak at a public hearing**, visit:
<http://www.epa.gov/airquality/oilandgas/registration.html>

To read the **Climate Action Plan – Strategy to Reduce Methane Emissions**, visit
<https://www.whitehouse.gov/blog/2014/03/28/strategy-cut-methane-emissions>

For information on the **Natural Gas STAR Methane Challenge Program**, see:
<http://www.epa.gov/gasstar/methanechallenge/index.html>