



Natural Gas Infrastructure R&D and Methane Emissions Mitigation Workshop

November 12-13, 2014



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DOE's Natural Gas Modernization Initiative

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Summary



It is critical to minimize leakage



Reducing natural gas leakage has multiple wins



We know enough to act

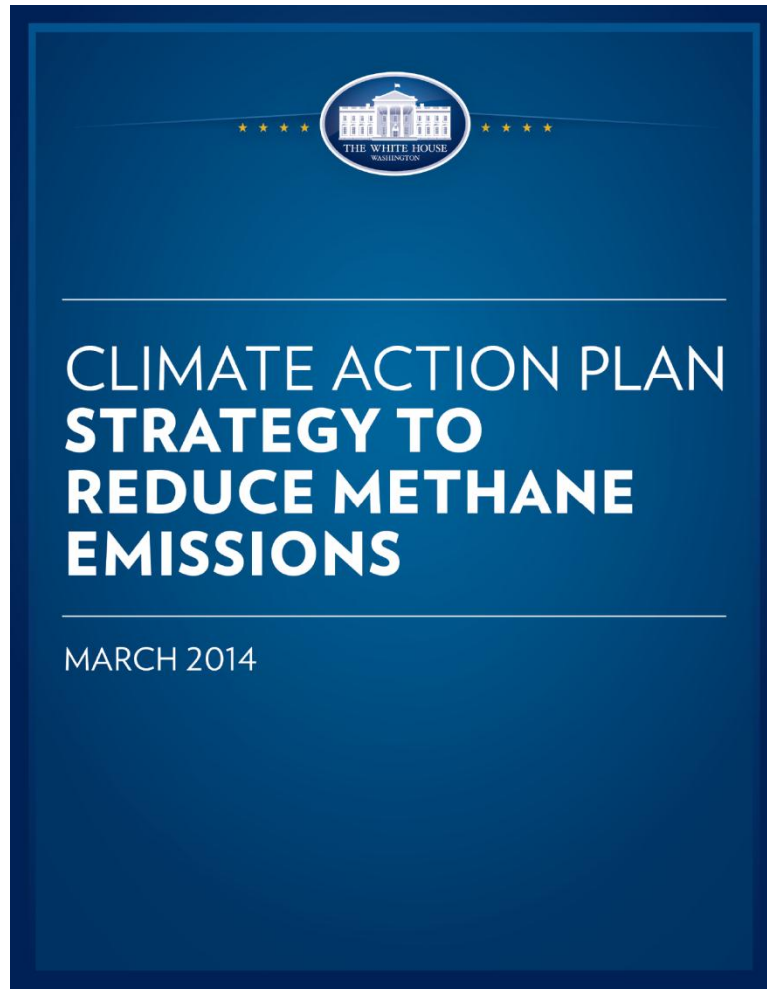


Natural Gas Modernization Initiative:

DOE is working to drive innovation, better characterize emissions, address market barriers, and catalyze action



Interagency Methane Strategy



“Reducing methane emissions is a powerful way to take action on climate change; and putting methane to use can support local economies with a source of clean energy that generates revenue, spurs investment, improves safety, and leads to cleaner air.”

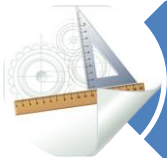
– Strategy to Reduce Methane Emissions

Interagency Methane Strategy – Three Pillars

President's Climate Action Plan: “Curbing emissions of methane is critical to our overall effort to address global climate change. [...] To achieve additional progress, the Administration will”:

- Develop a comprehensive Interagency Methane Strategy
- Pursue a collaborative approach with state governments as well as the private sector and cover all methane emitting sectors

Three Pillars:



Assessing current emissions data and addressing data gaps



Identifying Technologies and Best Practices for Reducing Emissions



Identifying Existing Authorities and Incentive-based Opportunities for Reducing Emissions



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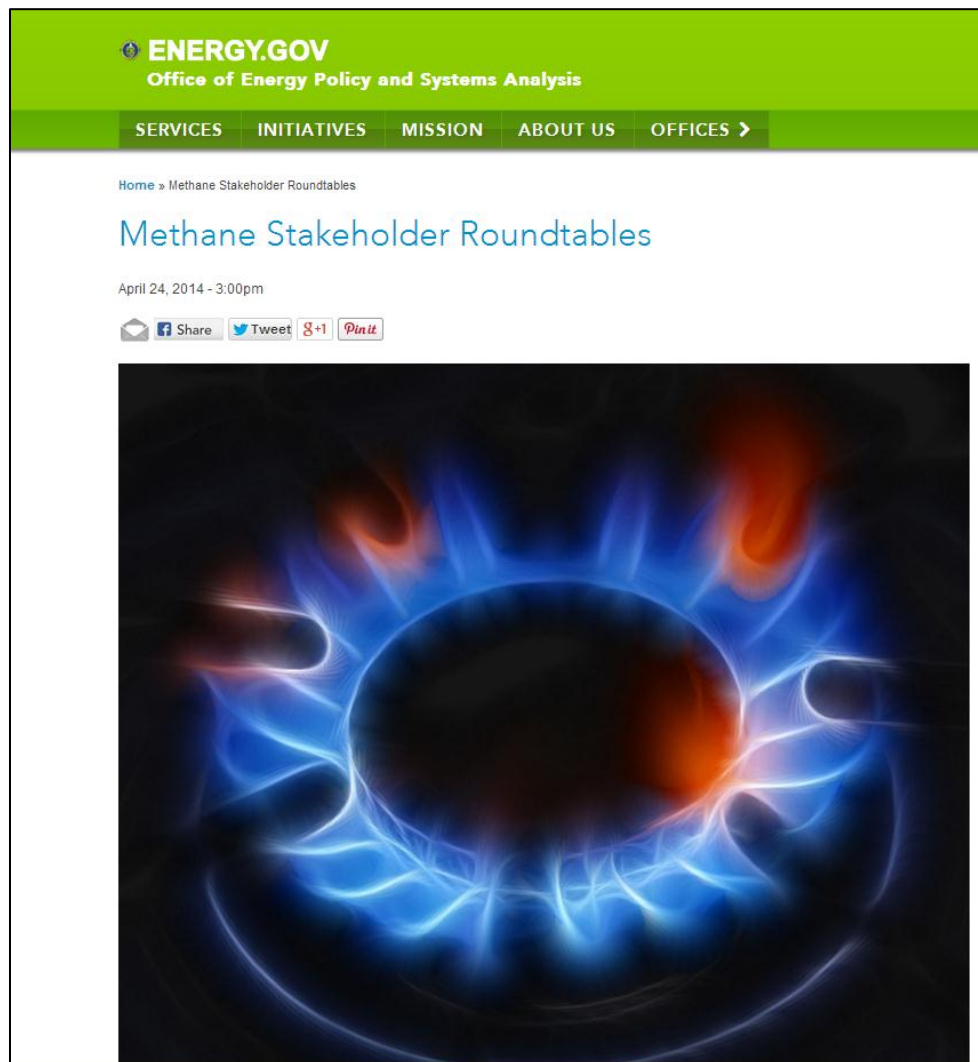
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Secretary's Methane Stakeholder Roundtables

- Held March-July 2014
- Hosted by Energy Secretary Moniz
- Focused on opportunities to:
 1. *modernize natural gas infrastructure*
 2. *reduce mid- and downstream methane emissions*

Key lessons learned:

1. *There is broad stakeholder support for taking action*
2. *The drivers for action vary by stakeholder group*
 - save money
 - promote efficiency
 - promote safety
 - create jobs



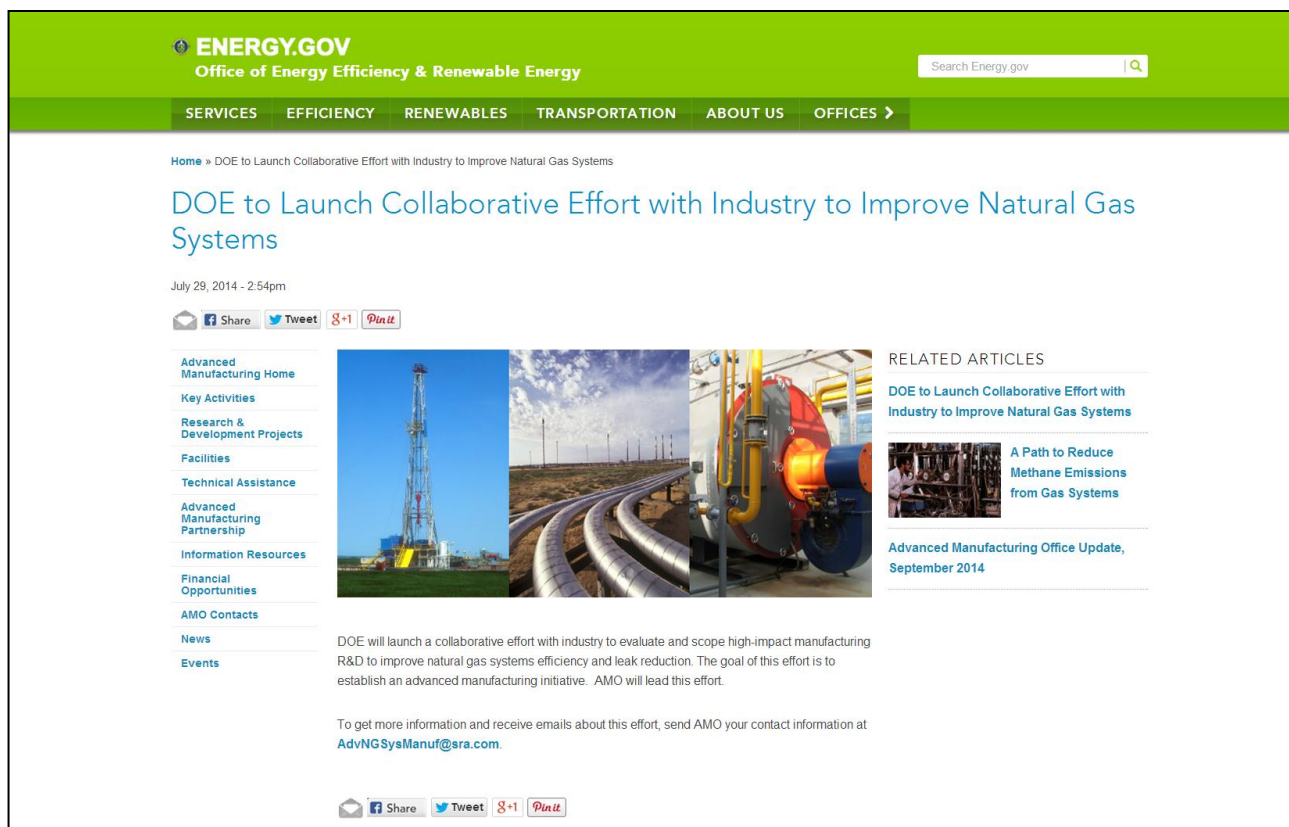
Summary of White House and DOE Methane Stakeholder's Capstone Roundtable



- The fundamental lesson learned from the Roundtables: there is broad stakeholder support for taking action that reduces methane emissions from natural gas transmission and distribution systems
- The drivers for action vary by stakeholder group
- DOE is working to address market barriers through our Natural Gas Modernization Initiative to realize these potential cost-effective greenhouse gas reductions

Path Forward: July 29th Capstone Methane Stakeholder Roundtable

DOE announced a series of actions, partnerships, and stakeholder commitments to help modernize the nation's natural gas transmission and distribution system and reduce methane emissions.



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Path Forward: 7 Keys Actions

- **Energy Efficiency Standards for Natural Gas Compressors**
- **Regulatory Incentives for Cost Recovery for Natural Gas Infrastructure Modernization**
- **Technical Partnership on Infrastructure Modernization (NARUC-DOE)**
- **Advanced Natural Gas System Manufacturing R&D Initiative**
- **Pipeline Efficiency Research, Development and Demonstration Program**
- **Loan Guarantees for Advanced Fossil Energy Projects that Reduce Methane Emissions**
- **Invest in Technologies for Leak Detection and Measurement**

NARUC/DOE Natural Gas Infrastructure Modernization Partnership

Supports NARUC's Gas Committee and Gas Staff Subcommittee, Subcommittee on Pipeline Safety, and Committee and Staff Subcommittee on Critical Infrastructure.

Primary Role:

1. Enhanced Pipeline Reliability and Security
2. Support Modernization Policies for the Gas Distribution System

Partnership Duration: 3 years based on FY15 funding for the Fossil Energy Natural Gas Midstream Infrastructure R&D Program



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Fossil Energy's Natural Gas Midstream Infrastructure R&D Program

Focusing efforts on reducing methane emissions and enhancing operational efficiency

Fiscal Year 2015 Research Areas

- **External Leak Detection & Monitoring**
Identification, measurement of methane leaks
- **Pipeline Inspection & Repair**
Reduce need to evacuate gas from the pipe
- **Improve Reciprocating Compressor Performance**
Increase operating efficiency, pipeline capacity utilization; reduce emissions
- **Smart Sensors for Pipeline Operational Efficiency**
Continuous in-pipe communication of operational parameters



Fossil Energy and Advanced Manufacturing Office Workshop

DOE announced Natural Gas Infrastructure R&D and Methane Emissions Mitigation Workshop

Natural Gas Infrastructure R&D and Methane Emissions Mitigation Workshop

The Advanced Manufacturing Office (AMO) at the U.S. Department of Energy, Office of Energy Efficiency and Renewable Energy and the Office of Fossil Energy (FE) are planning an AMO/FE Natural Gas Infrastructure R&D and Methane Emissions Mitigation Workshop. The workshop will be held November 12 and 13, 2014, in Pittsburgh, Pennsylvania (location to be identified).

The workshop is a follow up to the President's Climate Action Plan, and the Department of Energy's series of meetings on reducing methane emissions from natural gas systems. The workshop is part of the larger Administration *Strategy to Reduce Methane Emissions* and will convene experts in natural gas transmission and distribution infrastructure from industry, universities, non-profit associations, and government and National Laboratories. Information gained from the workshop will assist DOE leadership in identifying opportunities for increasing the operational efficiency of natural gas infrastructure and in detecting and eliminating leaks.

Technical solutions that will be discussed may include:

- Improving compressor station operational efficiency
- Materials science and innovative technology for natural gas pipeline systems and components (e.g., pipe inspection & repairs, valves, seals)
- Developing/improving sensors for leak detection and reduction

Registration information will be provided to recipients of this email soon. Expressions of interest in following the activities of the planned workshop may be entered at <http://energy.gov/eere/amo/articles/doe-launch-collaborative-effort-industry-improve-natural-gas-systems-1>.

Meeting Details

Nov. 12–13, 2014

Pittsburgh, PA

Exact location and registration information will be announced shortly

Thank you for your participation.

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