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## Factsheet: An Initiative to Help Modernize Natural Gas Transmission and Distribution Infrastructure

July 29, 2014 - 10:55am

### NEWS MEDIA CONTACT

- 202-586-4940

### CAPSTONE ROUNDTABLE ON REDUCING METHANE EMISSIONS: IMPROVING SAFETY, THE ECONOMY, THE ENVIRONMENT, AND CREATING JOBS

Today, the White House and the Department of Energy are hosting a Capstone Methane Stakeholder Roundtable. In addition, DOE is announcing a series of actions, partnerships, and stakeholder commitments to help modernize the nation's natural gas transmission and distribution systems and reduce methane emissions.

The Capstone event is the culmination of four previous in-depth Roundtables at which leaders from industry, environmental organizations, state regulators, consumer groups, academia, and manufacturing and labor unions were asked to provide Administration and other representatives with their individual perspectives on opportunities to modernize natural gas infrastructure and reduce mid- and downstream methane emissions.

The fundamental lesson learned from the Roundtables: *there is broad stakeholder support for taking action that reduces methane emissions from natural gas transmissions and distribution systems.* The drivers for these actions, however, vary by the groups represented at the Roundtables and include: the potential for increasing jobs associated with transmission and distribution system maintenance and equipment upgrades; opportunities for enhancing cost recovery for infrastructure investments and expanding markets; concerns about providing reliable and affordable utility service; the commitment to improving safety; and addressing near term opportunities to

address climate change. Roundtable participants identified a range of opportunities across these many fronts.

The path forward emerging from the Methane Roundtables -- a key deliverable in the *Climate Action Plan Strategy to Reduce Methane Emissions* -- also addresses several key Administration goals, including:

- Enhancing job creation, affordable energy, infrastructure modernization, and the role of natural gas in a clean energy economy;
- Reducing methane emissions from natural gas systems; and
- Producing the first-ever Quadrennial Energy Review, focusing on America's energy infrastructure.

Representatives from all of the participating sectors are coming together today to discuss lessons learned and actions that will be taken to modernize natural gas transmission and distribution infrastructure. It is not intended to be an end point for action, rather an inflection point for a range of actions to follow. DOE's initiative -- *Investing in Gas T&D Infrastructure: Improving Safety, the Economy, the Environment, and Creating Jobs* -- incorporates many of the lessons learned from the Roundtables and, together with stakeholder commitments, establishes a path forward to address these critical issues.

## INITIATIVE TO MODERNIZE NATURAL GAS TRANSMISSION AND DISTRIBUTION INFRASTRUCTURE

The Department of Energy is announcing several new initiatives and enhancing existing programs to modernize infrastructure and reduce methane emissions through common-sense standards, smart investments, and innovative research to advance the state of the art in natural gas system performance. These initiatives include:

- **Efficiency Standards for Natural Gas Compressors.** Today, DOE will take the first step toward establishing energy efficiency standards for new natural gas compressor units by issuing a Request for Information. Gas compressor units are estimated to consume over 7 percent of natural gas end use in this country, and improved efficiency will provide meaningful energy savings and reductions in greenhouse gas emissions.
- **Incentives for Modernization of Natural Gas Transmission System Infrastructure.** Following discussions with Chairwoman Cheryl LaFleur, the Secretary of Energy is recommending that the Federal Energy Regulatory Commission to explore efforts to provide greater certainty for cost recovery for new investment in modernization of natural gas transmission infrastructure, as part of FERC's work to ensure just and reasonable natural gas pipeline transportation rates. These efforts may include additional consideration of a simplified cost recovery mechanism for gas transmission companies who replace old and inefficient compressors and leak-prone pipes

and perform other infrastructure improvements and upgrades to enhance the safe and reliable operation of the pipeline.

- **Advanced Natural Gas System Manufacturing R&D Initiative.** DOE is launching a collaborative effort with industry with the goal of establishing an Advanced Natural Gas System Manufacturing R&D initiative. The initiative will evaluate and scope high-impact manufacturing research and development to improve natural gas system efficiency and reduce leaks. This will include a formal Request for Information, public workshops, and technical analysis and will leverage technology development areas already in progress through the Administration's Advanced Manufacturing Partnership (AMP 2.0), including Advanced Sensors, Control, and Platforms for Manufacturing; Advanced Materials Manufacturing; and Advanced Reciprocating Engine Systems.
- **Pipeline Efficiency Research, Development and Demonstration Program.** DOE is proposing to establish a new "First Things First" natural gas infrastructure technology program, focusing on RDD&D to enhance pipeline and distribution system operational efficiency and reduce methane emissions. The goal of the program is to drive research and technology development to improve identification of methane leaks, for example, by developing smart sensor technologies that collect and communicate data on a variety of operational parameters such as operating pressure and flow rates.
- **Providing Loan Guarantees for New Reduction Technologies: Advanced Fossil Energy Projects that Reduce Methane Emissions.** DOE will conduct outreach to industries in the advanced fossil sector and other stakeholders to increase awareness of the \$8 billion solicitation that DOE issued in December 2013 to provide loan guarantees to spur commercialization of innovative technologies that reduce methane emissions from gas transmission and distribution systems. This includes, but is not limited to, projects involving new wellhead drilling technology, flare reduction, methane capture and collection, or reducing methane leakage from pipelines and distribution networks.
- **Investing in Technologies for Leak Detection and Measurement.** DOE's efforts will build on the methane sensing initiative underway at ARPA-E, which on April 29, 2014, released a funding opportunity announcement for up to \$30 million for the *Methane Observation Networks with Innovative Technology to Obtain Reductions* (MONITOR) program. This program seeks to fund disruptive technologies for low-cost, highly sensitive systems for the detection and measurement of methane associated with the production and transportation of oil and natural gas.
- **Quadrennial Energy Review.** DOE will continue to conduct analysis and engage with stakeholders and the public through meetings for the Quadrennial Energy Review (QER). Two recent QER meetings in Pittsburgh and Denver focused in part on natural gas transmission and distribution systems and the need for modernization. These meetings are engaging stakeholders and the public in the development of the first installment of the QER, which focuses specifically on energy transmission, storage, and distribution infrastructure. This QER will include analysis to estimate the job creation from manufacturing, installing and maintaining equipment associated with

## PARTNERSHIPS & ENHANCED COORDINATION

Building on suggestions from Roundtable participants to enhance coordination within the Administration and with stakeholders, DOE is announcing the following new partnerships and collaborative efforts:

- **State Leadership for Efficient Natural Gas Distribution.** DOE will join with the National Association of Regulatory Utility Commissioners (NARUC) in a technical partnership to enable investments in infrastructure modernization and repairs to natural gas distribution networks. The role for DOE will be to provide grant funding and technical assistance to help inform decision-making by state utility commissioners. Through research and technical workshops, NARUC and DOE will also work with other federal agencies to convene decision makers, including the Pipeline and Hazardous Materials Safety Administration (PHMSA), to help establish leak measurement protocols and to identify new technologies and cost-effective practices for enhancing pipeline safety, efficiency and deliverability.
- **Sharing Solutions on Methane Measurement and Reduction**
  - **Establishing a Clearinghouse.** In close consultation with stakeholders and other federal agencies, DOE will develop a public clearinghouse to share information on successful strategies for measuring and reducing methane emissions, such as information on methane measurement studies, technology R&D, job creation, policies, and incentives, among other quantifiable co-benefits or drivers of infrastructure development. The first steps will be to consult with individual roundtable participants and potential clearinghouse partners, conduct broader outreach, survey existing resources and identify gaps, and identify potential partners.
  - **Convening Workshops.** DOE will also host workshops on technical solutions, financial models and other best practices to stimulate public discussion and inform company investments and policy actions. This will include measurement technologies and their various applications, strengths and limitations as well as policy options that can drive the adoption of improved sensing technologies into the marketplace.
- **Follow-on Coordination and Collaboration.** The Methane Capstone is an inflection point in our efforts to work with other agencies and stakeholders.
  - *Intra-DOE collaboration.* Several different DOE program offices are actively involved with implementing various aspects of the Administration's **Strategy to Cut Methane Emissions**. DOE has initiated an internal methane working group to help coordinate these activities within DOE and to continue engagement with external stakeholders, and to ensure that technology and policy development activities are shared with other agencies.

- *Interagency collaboration.* The White House is working with DOE, DOT (PHMSA), EPA, DOI and other agencies under the umbrella of the Quadrennial Energy Review and the Interagency Methane Strategy to share the lessons learned from the roundtables, collaborate on the range of new activities under this natural gas infrastructure initiative, and make it easier for stakeholders to engage on these issues.
- *Stakeholder collaboration.* As discussed at the Roundtables, DOE will continue to work with stakeholders on these initiatives to modernize the nation's natural gas transmission and distribution systems and reduce methane emissions.

### **COMMITMENTS FROM ROUNDTABLE PARTICIPANTS SAVE ENERGY, STOP LEAKS, START WORK**

Capstone participants have demonstrated leadership on methane leakage reductions and are making specific commitments going forward. For example:

- A group of five unions, the United Association of Plumbers and Pipefitters, the International Brotherhood of Electrical Workers, the Utility Workers Union of America, the Laborers International Union of North America, and the United Steelworkers, are announcing an expansion of apprenticeship and training programs to meet the need for skilled construction and utility workers to meet the growing demand for employees to replace and repair existing distribution pipeline systems.
- The Interstate Natural Gas Association of America's membership has greatly reduced leaks over the last 30 years, as part of various safety improvements; they pledge to reduce methane releases even further by focusing on major leaks around key equipment, and developing guidelines for directed inspection and maintenance at those facilities.
- Through initiatives outlined in the American Gas Association document "The LDC Story: A Focus on Safety Also Benefits the Environment," the natural gas utility industry will continue its concerted effort to upgrade and modernize our nation's pipeline network to enhance safety, which has also contributed significantly to a declining trend in emissions from the natural gas system while balancing costs with an eye towards providing clean natural gas to customers at affordable prices.
- National Grid is investing more than \$1 billion in its natural gas infrastructure this year and \$6 billion over the next five years, to both grow the distribution network to meet customer demands and reduce methane emissions through main pipeline replacement and technology deployment. National Grid is committed to working with the Administration, federal and state regulators, other energy companies, local communities, and other stakeholders, to bring the nation's energy network into the 21st century.
- PSE&G recently reached a settlement on its Energy Strong proposal with the New Jersey Board of Public

Utilities BPU that will allow them to proactively protect, strengthen, and modernize a portion of the gas systems against severe weather conditions. The result will be an increase in resiliency, safety, and a continuation of declining emissions reductions.

- PG&E, the second largest gas utility in the country, is taking actions today that enhance safety, create jobs and protect the environment by deploying advanced leak detection technologies to efficiently find and fix leaks, accelerating pipe replacement and eliminating cast iron, improving the way employees do their work, and partnering with key stakeholders to more accurately measure and account for methane associated with the operation of the natural gas delivery system.
- NW Natural is committed to completing its pipeline modernization program, with removal of cast iron pipes completed in 2000 and the last of their bare steel pipe scheduled for replacement in 2015. The company is also assessing new methods to further tighten the system through modifications of equipment and use of advanced emission reduction techniques during pipeline maintenance.
- The National Association of Regulatory Utility Commissioners will join DOE in a technical partnership.
- The BlueGreen Alliance (BGA), a national partnership of labor unions and environmental organizations, will launch a national public education campaign supporting accelerated repair and replacement of America's natural gas distribution pipelines later this year. The BlueGreen Alliance recently published its report, *Interconnected: The Economic and Climate Change Benefits of Accelerating Repair and Replacement of America's Natural Gas Distribution Pipelines*, that shows the U.S. can grow or sustain over 300,000 jobs by tripling the current rate of repair and replacement of pipes in the distribution system.
- Environmental Defense Fund is collaborating with groups of industry, academics, and other experts, to conduct foundational science to improve understanding of the scale and sources of methane emissions across the natural gas supply chain, as well as conducting independent economic research to demonstrate where the most cost-effective reduction opportunities exist.
- Participants in the Downstream Initiative (Consolidated Edison Company of New York, Inc., National Grid, Pacific Gas & Electric, Public Service Electric & Gas, and Xcel Energy) are committed to working with the Administration, federal and state regulators, and stakeholders to address technical, regulatory, and workforce challenges to modernize infrastructure and achieve additional methane emissions reductions from the distribution segment. While natural gas utility companies have made progress over the years reducing methane emissions, they are committed to taking a leadership role and doing more to modernize infrastructure going forward to realize the safety, economic, environmental, and health benefits that natural gas provides their customers.
- Southwestern Energy Company believes that opportunities exist to cost-effectively reduce methane emissions from the natural gas sector, and is taking steps to pursue these opportunities through measurement R&D; implementing new technologies and practices to reduce methane emissions, including a company-wide leak

- detection and repair program; and collaborating with other companies across the natural gas supply chain to identify cost-effective solutions for reducing methane emissions and enhancing the energy delivery efficiency of the natural gas supply chain.
- Peoples Gas is committed to reducing methane emissions through an accelerated investment in its natural gas distribution system in Chicago. More than 1,000 highly skilled workers across multiple trades are replacing the infrastructure to reduce methane emissions by 192,000 metric tons of carbon dioxide equivalent (CO<sub>2</sub>e), comparable to taking 38,000 cars off the road.

## RELATED ARTICLES

**Department of Energy Announces Steps to Help Modernize Natural Gas Infrastructure**

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Docket No. RP16-\_\_\_\_-000

Exhibit No. ANR-041

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### EPA Proposes New Commonsense Measures to Cut Methane Emissions from the Oil and Gas Sector/Proposal Cuts GHG Emissions, Reduces Smog-Forming Air Pollution and Provides Certainty for Industry

Release Date: 08/18/2015

Contact Information: Enesta Jones Jones.enesta@epa.gov 202-564-7873 202-564-4355

**WASHINGTON** – Continuing the Obama Administration’s commitment to take action on climate change and protect public health, the U.S. Environmental Protection Agency (EPA) is announcing commonsense proposed standards today that would reduce emissions of greenhouse gases (GHG) and volatile organic compounds (VOC) from the oil and natural gas industry. The proposal is a part of the Administration’s strategy under President Obama’s [Climate Action Plan](#) to cut methane emissions from the oil and gas sector by 40 to 45 percent from 2012 levels by 2025.

Methane, the key constituent of natural gas, is a potent GHG 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.

“Today, through our cost-effective proposed standards, we are underscoring our commitment to reducing the pollution fueling climate change and protecting public health while supporting responsible energy development, transparency and accountability,” said EPA Administrator Gina McCarthy. “Cleaner-burning energy sources like natural gas are key compliance options for our Clean Power Plan and we are committed to ensuring safe and responsible production that supports a robust clean energy economy.”

The proposed standards for new and modified sources are expected to reduce 340,000 to 400,000 short tons of methane in 2025, the equivalent of reducing 7.7 to 9 million metric tons of carbon dioxide. EPA estimates the rule will yield net climate benefits of \$120 to \$150 million in 2025. Those standards are also expected to reduce 170,000 to 180,000 tons of ozone-forming VOCs in 2025, along with 1,900 to 2,500 tons of air toxics, such as benzene, toluene, ethylbenzene and xylene. Ozone is linked to a variety of serious public health effects, including reduced lung function, asthma attacks, asthma development, emergency room visits and hospital admissions, and early death from respiratory and cardiovascular causes. Air toxics include chemicals that are known or suspected to cause cancer and other serious health effects.

The proposed standards will complement voluntary efforts, including [EPA’s Methane Challenge Program](#), and are based on practices and technology currently used by industry. To cut methane and VOC emissions, the proposal requires:

- Finding and repairing leaks;
- Capturing natural gas from the completion of hydraulically fractured oil wells;
- Limiting emissions from new and modified pneumatic pumps; and
- Limiting emissions from several types of equipment used at natural gas transmission compressor stations, including compressors and pneumatic controllers.

EPA’s Methane Challenge Program that was proposed earlier this year expands on the successful [Natural Gas STAR program](#), which serves as a platform for companies who want to make an ambitious and transparent commitments to address methane emissions. This flexible program has the potential to foster significant cost-effective emission reductions across the oil and gas sector and to provide transparency on the progress partner companies are making to reduce emissions.

As part of the proposal announced today, the agency is updating the 2012 New Source Performance Standards (NSPS) to address methane as well as VOC emissions for sources covered in that rule. EPA’s proposal would also require that industry reduce VOC and methane emissions from hydraulically fractured and refractured oil wells, which can contain significant amounts of natural gas along with oil. In addition, the proposal means methane and VOC reductions “downstream” from wells and production sites, covering equipment in the natural gas transmission segment of the industry that was not regulated in the agency’s 2012 oil and natural gas rules. Additionally, the agency proposes to clarify and streamline Clean Air Act permitting requirements in states and Indian country.

Today’s proposal includes proposed guidelines for states to reduce VOC emissions from existing oil and gas sources in certain ozone nonattainment areas as well as mid-Atlantic and Northeast states that are part of the Ozone Transport Region.

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EPA will take comment on the proposals for 60 days after they are published in the Federal Register. The agency will hold public hearings and will announce details soon.

More information, including technical fact sheets, is available at <http://www.epa.gov/airquality/oilandgas/actions.html>

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Last updated on 9/18/2015