

**COMMONWEALTH OF VIRGINIA  
DEPARTMENT OF ENVIRONMENTAL QUALITY**

**METHANE LEAKAGE FROM NATURAL GAS INFRASTRUCTURE  
REVISION A19**

**AD HOC WORK GROUP, THIRD MEETING MINUTES**

**THIRD FLOOR CONFERENCE ROOM  
1111 EAST MAIN STREET, RICHMOND, VIRGINIA  
June 26, 2019**

**Members Present:**

Joshua Ball, CNX	Will Cleveland, SELC
Braven Beaty, The Nature Conservancy	Kevin Elkins, Coronado Global
Lisa S. Beal, Dominion	Richard Lutz, Transco
James Bradbury, Georgetown Climate	Tyler Lake for Shepelle Watkins-White, VNG
Jonah Fogel for Andres Clarens, UVA	Andrew Williams, EDF

**Guest Speakers:**

Joshua Shodeinde, MDE	Stephen Holcomb, Columbia Gas
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**Staff:**

**Department of Environmental Quality**

Michael G. Dowd, Air Division	Irina Calos, Communications
Tamera Thompson, Air Division	Karen Sabasteanski, Regulatory Affairs
Tom Ballou, Air Division	

**Dept. of Mines, Minerals and Energy**

Michael Skiffington, Policy and Planning

The meeting began at approximately 10:05 a.m.

**Meeting Purpose:** This ad hoc work group has been established to advise and assist DEQ in the development of a framework for limiting methane leakage from natural gas infrastructure. This group will support DEQ in its collection and evaluation of data to inform the regulation development process. The agenda (Attachment A) follows.

**Welcome and Introductions:** Ms. Sabasteanski welcomed the group. Members introduced themselves individually.

**Presentations:** Mr. Shodeinde, Regulatory Compliance Engineer with the Maryland Department of the Environment (MDE), Air and Radiation Administration, discussed the current status of the development of a regulation controlling methane emissions from natural gas compressor stations (Attachment B). Mr. Shodeinde indicated that the MDE stakeholder group was meeting on June 28, 2019 to consider draft proposed regulation (available on the MDE web site at

<https://mde.maryland.gov/programs/Regulations/air/Pages/ARMARegulationsStakeholders.aspx>); a final regulation is expected next year.

Mr. Holcomb, Team Leader, Environmental Policy, NiSource on behalf of Columbia Gas of Virginia, gave a presentation on local distribution centers (LDCs), including discussion of the Steps to Advance Virginia's Energy (SAVE) Plan and the amount of methane emissions being reduced in Virginia by natural gas distribution companies (Attachment C).

The presentations were followed by group questions and discussion.

**Group Discussion:** Rather than attempt to complete the work sheets previously distributed by Ms. Sabasteanski (Attachment D), the group entered into a general discussion, beginning with whether methane should be addressed by the three primary sectors (production and processing, transmission and storage, and distribution). The group also discussed general means of control including best management practices (BMPs) and leak detection and repair (LDAR) programs, and whether they should be voluntary or mandatory.

The group did not attempt to reach formal consensus on any potential issues, i.e., there was no attempt to identify areas of complete agreement by all members. However, a number of areas of general agreement that merit further discussion and exploration were identified:

1. Given the relatively small percentage of contribution of methane emissions to the overall inventory and jurisdictional limitations, LDCs should be a relatively low priority.
2. Reporting is important, particularly using certified data, in order to further develop the inventory and demonstrate compliance. (Note there is currently some under-reporting due to varying applicability thresholds.)
3. Recordkeeping - LDAR protocols should be a component. Details have already been worked out or can be amended, and this can be a baseline. However, an LDAR schedule needs to be equipment-specific. For example, optical gas image (OGI) cameras may not be an option for existing/smaller sources due to cost.
4. Subparts OOOO and OOOOa of 40 CFR Part 60 could be the starting point for a program. Existing facilities are not covered by these federal New Source Performance Standards, but they could be a model and work with the current greenhouse gas (GHG) reporting and focused inspection used by existing sources.
5. Alternative compliance should be considered; i.e., sources should have the flexibility to use new technologies and controls.
6. BMPs are useful on a case by case basis, recognizing different choices available to different sources.

7. Specific technological controls need to be identified in the context of what is being controlled, i.e., what is best by equipment/blowdown events.

8. Control cost effectiveness should be considered.

9. A periodic review of available technologies (innovations, improvements) should be considered.

**Wrap-up/Next Steps:** Ms. Sabasteanski concluded the meeting. The next meeting is scheduled for August 13, 2019.

The meeting adjourned at approximately 3:00 p.m.

Attachments  
REG\DEV\A19-AH04-3-minutes

**COMMONWEALTH OF VIRGINIA  
DEPARTMENT OF ENVIRONMENTAL QUALITY**

**METHANE LEAKAGE FROM NATURAL GAS INFRASTRUCTURE  
AD HOC WORK GROUP**

**DRAFT AGENDA, THIRD MEETING**

**June 26, 2019**

10:00 – 10:05	WELCOME
10:05 – 10:15	ISSUES OVERVIEW
10:15 – 10:45	PRESENTATION: Maryland's regulatory process and status (Joshua Shodeinde, MDE)
10:45 - 11:00	PRESENTATION: LDCs (Stephen Holcomb, Columbia Gas)
11:00 – 11:30	GROUP DISCUSSION
11:30 – 12:30	LUNCH BREAK (on your own)
12:30 – 2:45	GROUP DISCUSSION
2:45	WRAP UP/NEXT STEPS



**Maryland**  
Department of  
the Environment

# Minimizing Methane Emissions from the Natural Gas Industry



**Joshua Shodeinde, Maryland Department of the Environment (MDE)**  
**VA DEQ Ad Hoc Work Group Meeting**  
**June 26, 2019**



# Maryland Commission on Climate Change

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- In 2007, The Maryland Commission on Climate Change (MCCC) was established by Executive Order
  - MCCC was codified into law in 2015
- Basic charge of the MCCC:
  - Provide recommendations on how to reduce GHG emissions and adapt to the impacts of climate change



# Greenhouse Gas Reduction Act (GGRA)

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- Originally adopted in 2009
- Required that Maryland develop and implement a plan to reduce greenhouse gas (GHG) emissions by 25% by 2020
- The law also requires that the plan support a healthy economy and create new jobs
- Refreshed by the General Assembly in 2016 to add an additional goal for 2030
  - 40 % GHG reduction by 2030
  - Same focus on the economy and jobs





# MCCC Recommendations

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- On November 15, 2016 the MCCC issued its annual report
- The report included over forty recommendations on mitigation, adaptation and education, communication and outreach
- One was specific to in-state methane emission reductions:
  - *“... the MCCC supports MDE’s efforts to reduce methane emissions from landfills, natural gas infrastructure (e.g. compressor stations and underground storage), and waste water treatment plants, and recommends further research into additional sources such as agriculture and fuel production/transport”.*







# US Climate Alliance

- Maryland joined the U.S. Climate Alliance (USCA) on January 10, 2018
  - Originally, an alliance of 12 states ... now 24 states
- Basic mission: to meet the goals of the Paris Climate Agreement, aiming to reduce GHG emissions by at least 26-28 percent below 2005 levels by 2025
- One working group is focused on short-lived climate pollutants.





# MDE Actions

## PHASE 1

**Production**

Ban on hydraulic fracturing



## Phase 2

**Transmission and Storage**

Currently drafting regulations



## Phase 3

**Distribution**

Under review



# MD Transmission Sector Sources

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- Three compressor stations
  - Dominion, Myersville
  - TransCanada, Rutledge
  - Williams Transco, Ellicott City
- One underground storage facility
  - Spectra Texas Eastern, Accident
- One import and liquefaction/export facility
  - Dominion, Cove Point





# Stakeholder Meetings

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MEETING 1 – June 29, 2017

Overview of the Natural Gas Industry



MEETING 2 – July 10, 2018

Regulatory and Voluntary Concepts - General



MEETING 3 – March 8, 2019

Regulatory and Voluntary Concepts - Specifics



FRIDAY'S MEETING – June 28, 2019

Summary and Discussion of “Discussion Draft” of Regulation



# Stakeholder Comments/Concerns

## Industry

Establish regulatory framework that allows for flexibility

Consider requirements that will not cause more emissions

## Community Groups

Concerned about methane emissions/leakage surrounding facilities

Require facilities to keep communities informed during blowdown events

## Environmental Advocacy

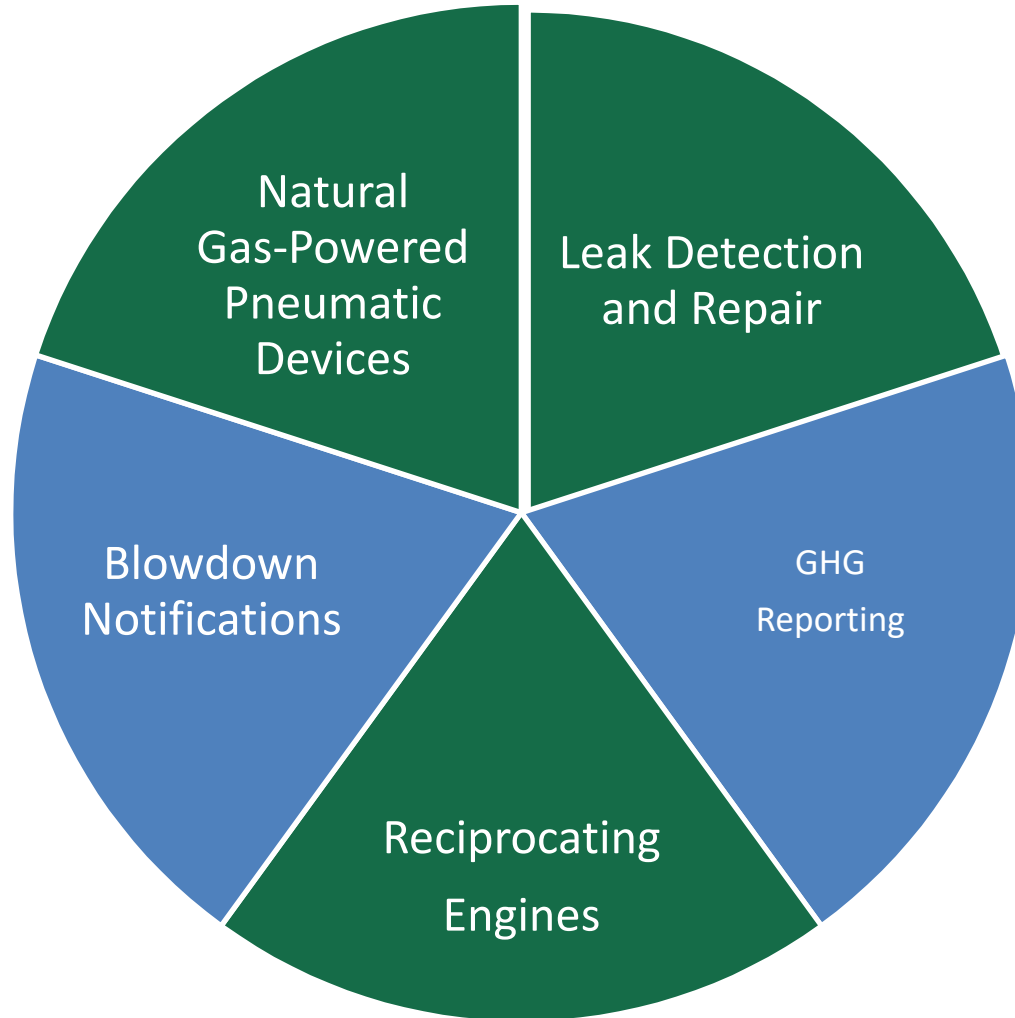
Maryland should focus on emissions from entire natural gas value chain

Encourage methane recovery



# Part I: Regulatory Requirements (Under Consideration)

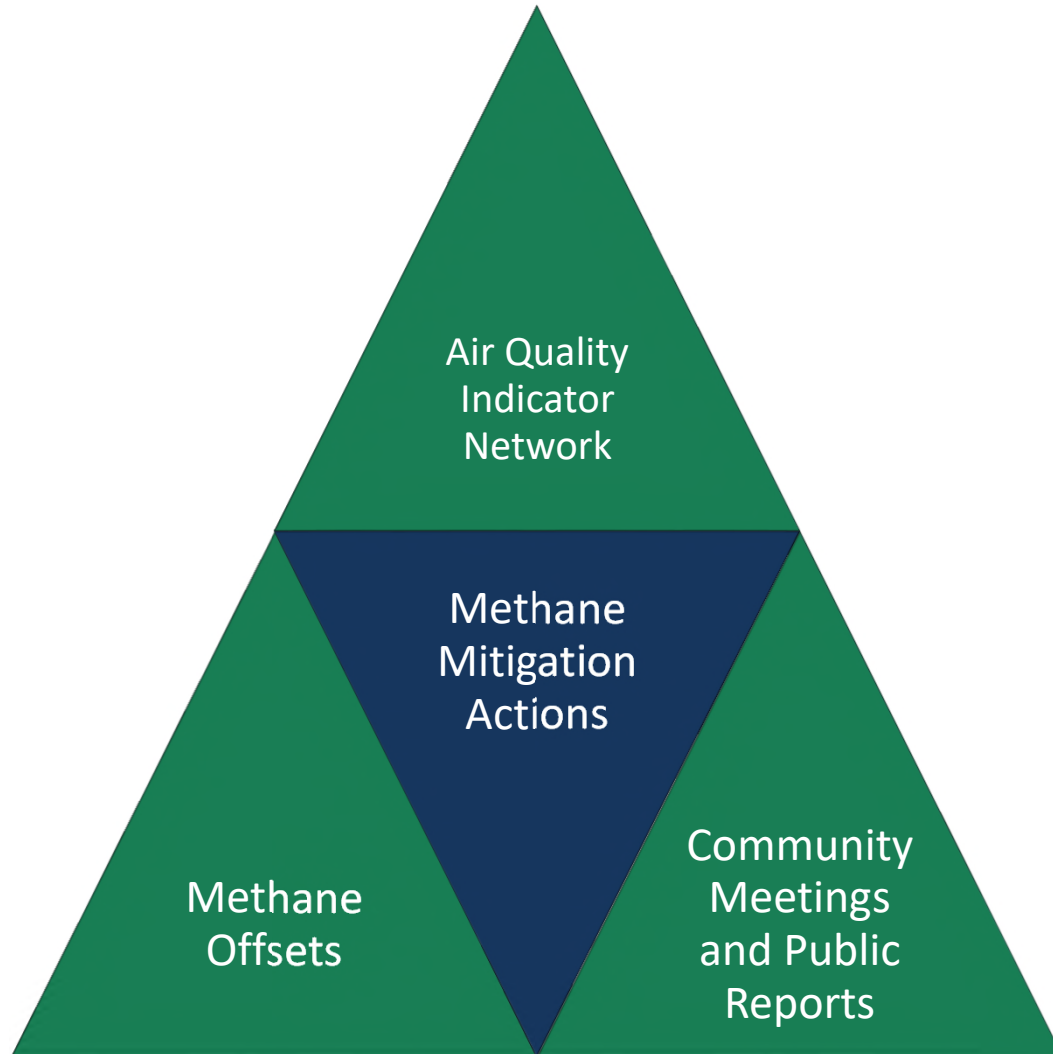
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## Part II: Voluntary (Under Consideration)

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# Summary

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- MCCC, GGRA, and USCA are driving forces to MDE actions
  - Also interest from surrounding communities
- MDE intends to evaluate and address methane emissions across entire natural gas chain
  - Current focus is Transmission and Storage
- Contact Information:

Joshua Shodeinde

[Joshua.Shodeinde@maryland.gov](mailto:Joshua.Shodeinde@maryland.gov)

410-537-3866



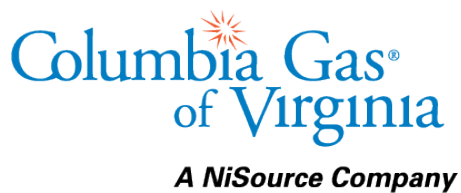
A bright sun is positioned in the upper right quadrant of the image, casting a strong glow and creating a lens flare effect. The sky is a deep, clear blue, and several large, fluffy white cumulus clouds are scattered across the scene, particularly on the left and right sides. The overall atmosphere is bright and clear.

**QUESTIONS**



# Methane Emissions Reductions in Virginia By Natural Gas Distribution Companies

June 26, 2019



# Largest Natural Gas Distribution Companies in the Commonwealth



*A NiSource Company*

- Headquartered in Chester, Columbia Gas of Virginia provides natural gas service to more than 275,000 residential, commercial and industrial customers across a diverse footprint encompassing 22,000 square miles of Virginia, including 55 counties, 17 cities, and 20 towns. Columbia Gas of Virginia is one of the seven energy delivery companies of NiSource Inc., who together provide essential natural gas and electric service to nearly 4 million customers.



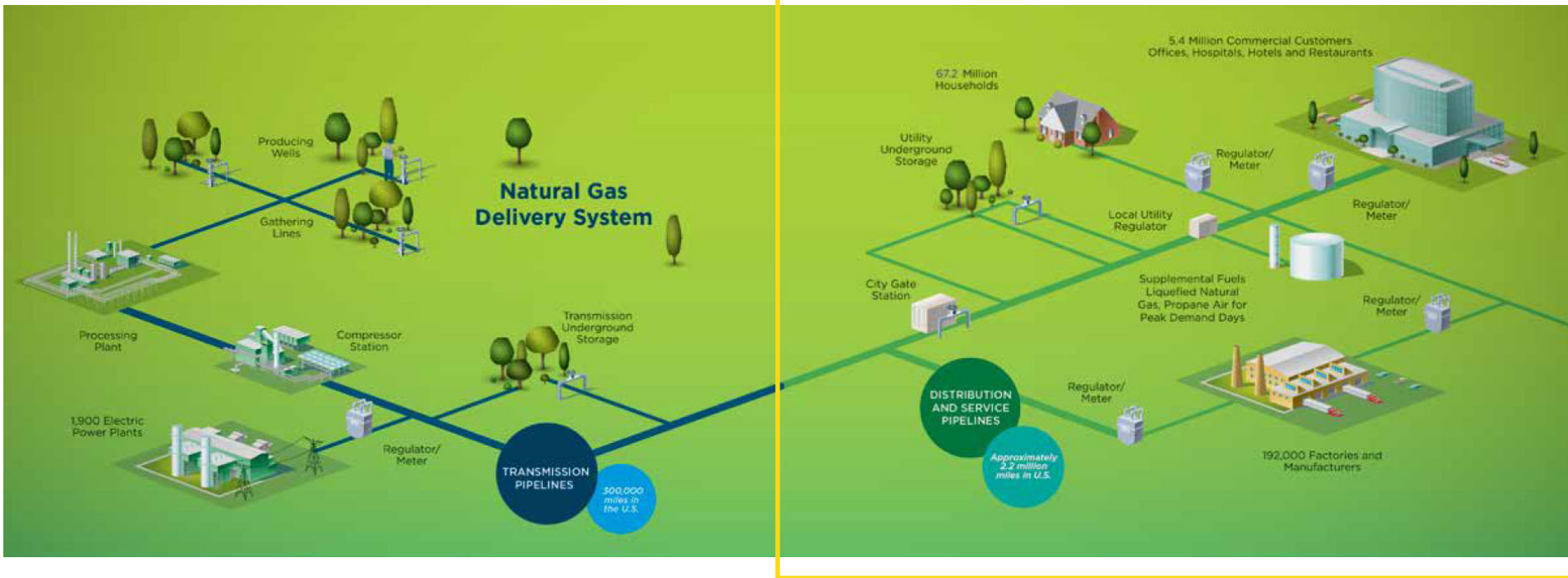
- With roots that stretch back to 1850, Virginia Natural Gas (VNG) serves approximately 299,000 residential, commercial and industrial customers in southeastern Virginia. VNG is owned by Southern Company Gas, a wholly-owned subsidiary of Southern Company. Southern Company serves nearly 9 million natural gas and electric customers.



*A WGL Company*

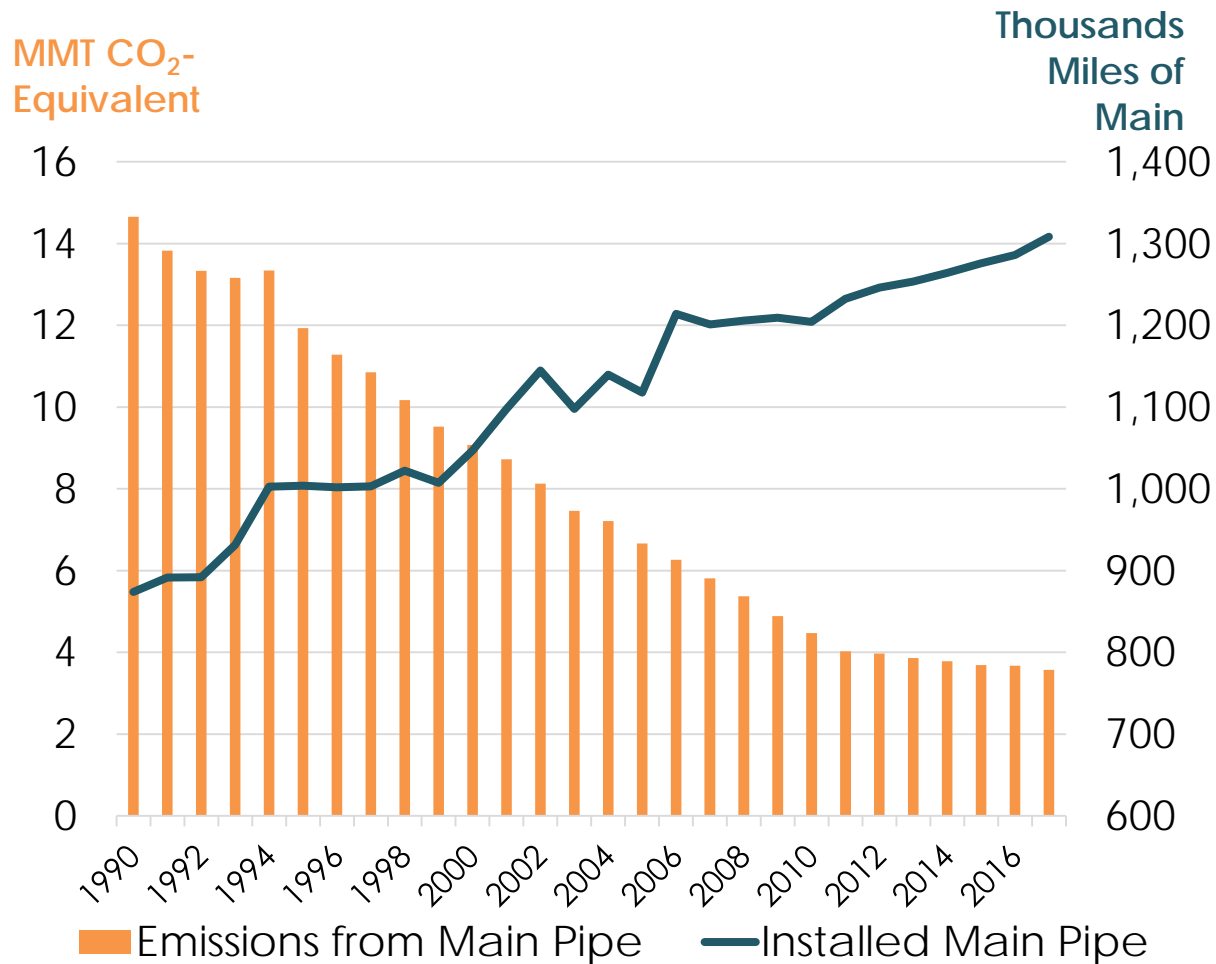
- Washington Gas Light Company is a regulated natural gas utility providing safe, reliable natural gas service to more than 1.1 million customers in the District of Columbia, Maryland and Virginia. A subsidiary of WGL Holdings, Inc., the company has been providing energy to residential, commercial and industrial customers for more than 170 years. Please see the Appendix for more information about the company.

# Natural Gas Distribution Overview



Source: American Gas Association (AGA)

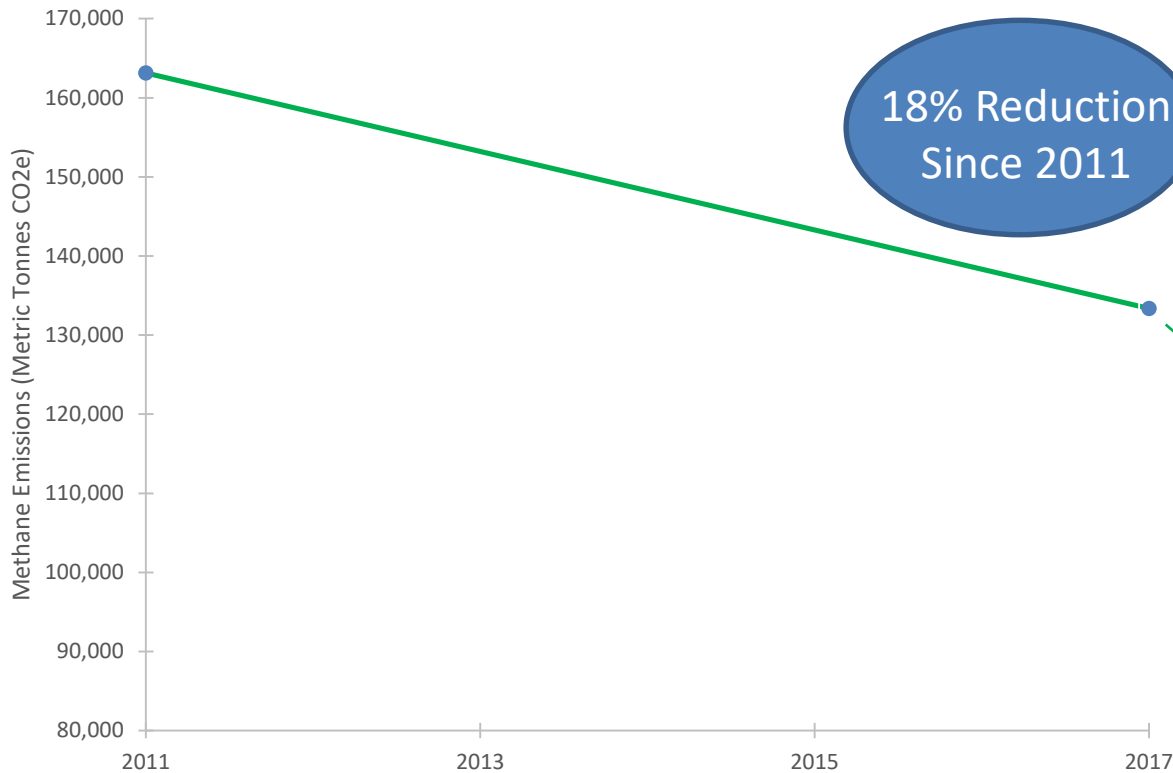
# Pipe Replacement Lowers Emissions, Even With System Growth



Sources: EPA and AGA

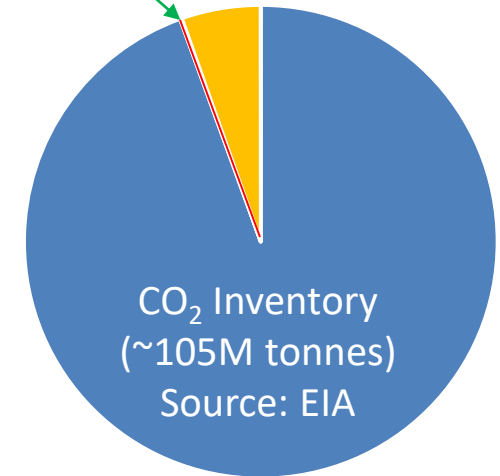
Activity Data and Emissions from EPA *Inventory of U.S. Greenhouse Gas Emissions and Sinks: 1990-2017*

# Natural Gas Distribution Companies in VA are Reducing Methane Emissions



LDC Methane Inventory  
0.1% of VA GHG Inventory  
(133,358 tonnes CO<sub>2</sub>e)

Non-LDC Methane Inventory  
(~6M tonnes CO<sub>2</sub>e)  
Source: EPA GHGRP



Source: EPA Flight Database – 2011 and 2017 Data from Columbia Gas of Virginia, Virginia Natural Gas, and Washington Gas Light Company

Virginia GHG Inventory

# Steps to Advance Virginia's Energy (SAVE) Plan, Regulated by the SCC

## Safety

## Reliability

## Methane Reductions

- In 2010, the General Assembly passed the SAVE Act, which allows for recovery of certain costs associated with infrastructure replacement projects
  - All projects must enhance safety or reliability, and reduce GHG emissions
  - Annual filings with the SCC publicly report the GHG emission reductions
- Columbia Gas has ramped up investment from \$5M to \$37M per year
  - The company eliminated cast iron pipe in 2015
  - Cathodically unprotected bare steel is being replaced with modern cathodically protected coated steel and plastic pipe
- Virginia Natural Gas has ramped up investment from \$17M to \$39M per year
- Washington Gas is investing an average of \$100M per year

# Voluntary Partnerships to Reduce Methane Emissions

- We are founding members of EPA's Methane Challenge Program, a voluntary program to recognize companies that make specific and transparent commitments to reduce methane emissions
  - Washington Gas hosted the Excavation Damage Prevention Technology Transfer Workshop in May 2017
- Working collaboratively with EPA for nearly 30 years to support methane emissions reductions through EPA's Natural Gas STAR Program





# Methane Reduction Targets



- 50% methane reduction from natural gas main and service lines by 2025, from a 2005 baseline
  - Columbia Gas of Virginia achieved a 22% reduction in 2018. NiSource is on track to achieve its 2025 target.



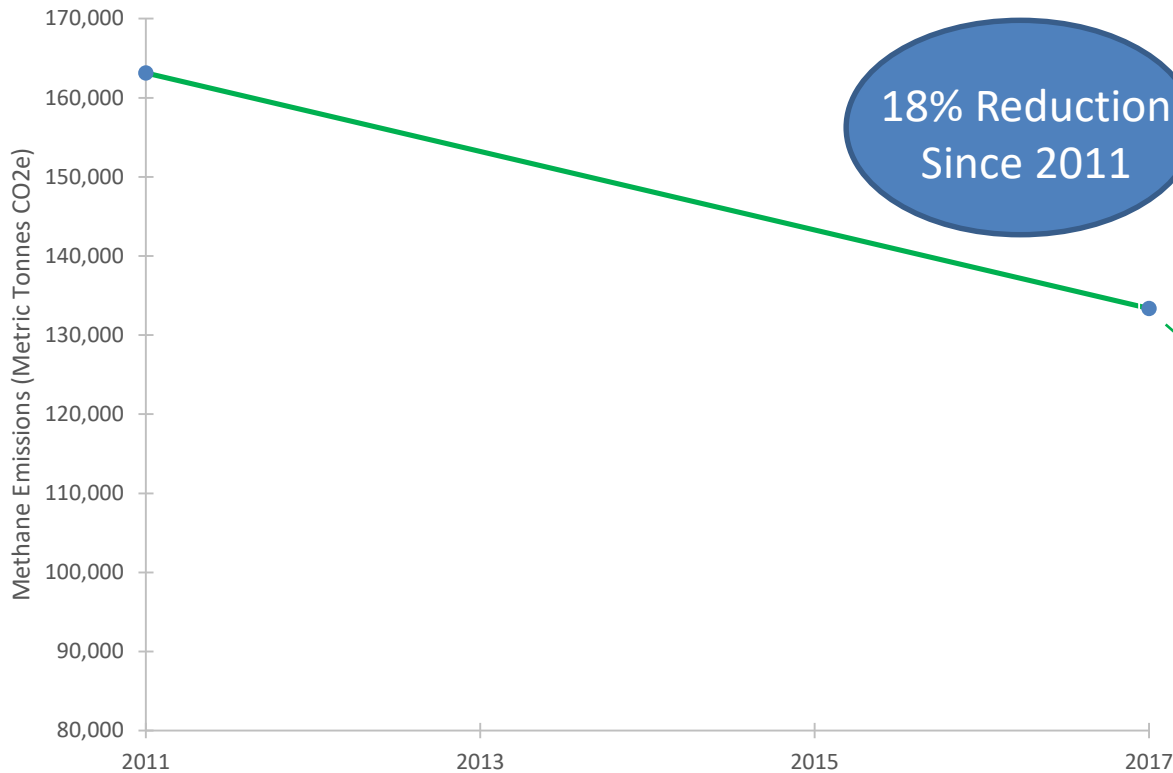
- Methane intensity (leak rate divided by throughput) of 0.22% by 2025



- In 2014, Washington Gas achieved a **20% reduction in the fugitive emission intensity** of their gas supply system compared to the 2008 baseline
- The company set a new target for 2025 – targeting a 38% reduction in the fugitive emission intensity

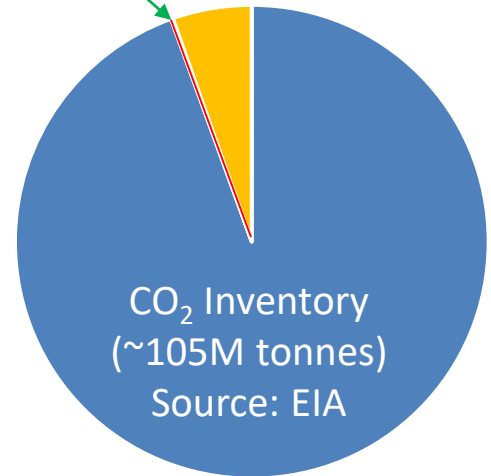
# Questions and Discussion

(Slide #5 Has Been Copied Here for Review)



LDC Methane Inventory  
0.1% of VA GHG Inventory  
(133,358 tonnes CO<sub>2</sub>e)

Non-LDC Methane Inventory  
(~6M tonnes CO<sub>2</sub>e)  
Source: EPA GHGRP



Source: EPA Flight Database – 2011 and 2017 Data from Columbia Gas of Virginia, Virginia Natural Gas, and Washington Gas Light Company

## Virginia GHG Inventory

# Appendix

# WASHINGTON GAS SAVE INFO

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- Washington Gas(WG) has 9 distribution programs and 4 transmission programs that enhances the safety, improve reliability, and reduce GHG emissions under the VA SAVE program.
- WG is investing an average of **\$100M per year**
  - Note: VA PSC approved \$500M starting Jan 2018 - Dec 2022 with a cap not to exceed by 5%
- WG replaced **85 miles of main** and 31,563 services over the past 9 years.
- All of the WG's proposed replacements for SAVE reduce potential leaks, enhance safety (e.g., Excess Flow Valves, new marking technology, updated as-builting, moving inside meters outside, etc.) and improve reliability (e.g., uprating low pressure systems which can reduce water infiltration into pipelines causing outages, etc.) of the Company's distribution system.
- Replacements will be made using modern polyethylene (PE) pipe which has a historical leak rate of almost zero, excluding leaks related to excavation damages which are addressed in the Company's robust damage prevention program.

## EXPERIENCED ENVIRONMENTAL STEWARDS

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- Washington Gas has an established Emissions Committee that brings together various cross-functional disciplines to provide strategic planning, support, technical assessment, and policy oversight to ensure focus and direction of methane emission reduction programs and projects.
- In 2018, Washington Gas earned a top spot as **Utility Champion of the Environment** in a nationwide industry study of energy utilities conducted by Market Strategies International for Cogent Reports. Among the criteria for this award: dedication to environmentally friendly energy sources, providing effective tools and programs, helping customers conserve energy, supporting environmental causes, encouraging green initiatives for buildings and vehicles, and demonstrating progress in protecting the environment.
- In 2016, we reported substantial progress in reducing greenhouse gas (GHG) emissions, exceeding targeted expectations over a 2008 GHG baseline assessment. Afterwards, we established new long-range GHG goals and targets to achieve “carbon neutrality” for our fleet and facilities by 2025 while striving to reduce fugitive emissions from the gas we deliver by 38 percent. In addition, we added a third goal — to help WGL customers achieve reductions equivalent to the avoidance of 18 million tons of carbon dioxide emissions. Because of these and other initiatives, Washington Gas’ achievements were recognized in 2017 by the Maryland Green Registry’s Leadership Award.

## Worksheet I: Applicability by Industry Segment

1. Where do we focus our resources, and why?
2. For each sector, where is the low-hanging fruit?

Production and processing  
(wells, gathering, processing)

1. \_\_\_\_\_

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2. \_\_\_\_\_

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\_\_\_\_\_

Transmission and storage  
(pipeline, compressor stations, storage)

1. \_\_\_\_\_

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2. \_\_\_\_\_

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Distribution  
(city gate, mains, customers)

1. \_\_\_\_\_

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2. \_\_\_\_\_

\_\_\_\_\_

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## Worksheet II: Potential Recommendations

### Voluntary

Improve emission reductions and generate useful data with certainty:

1. \_\_\_\_\_  
\_\_\_\_\_
2. \_\_\_\_\_  
\_\_\_\_\_
3. \_\_\_\_\_  
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Assure voluntary measures are ongoing/assure continuity:

1. \_\_\_\_\_  
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2. \_\_\_\_\_  
\_\_\_\_\_
3. \_\_\_\_\_  
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### Regulatory

Incentives:

1. Reward super compliance with reduced reporting  
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2. \_\_\_\_\_  
\_\_\_\_\_
3. \_\_\_\_\_  
\_\_\_\_\_

Other suggestions:

1. \_\_\_\_\_  
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2. \_\_\_\_\_  
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3. \_\_\_\_\_  
\_\_\_\_\_

Baseline requirements

1. \_\_\_\_\_  
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2. \_\_\_\_\_  
\_\_\_\_\_

Monitoring

1. \_\_\_\_\_  
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2. \_\_\_\_\_  
\_\_\_\_\_

Recordkeeping/reporting

1. \_\_\_\_\_  
\_\_\_\_\_
2. \_\_\_\_\_  
\_\_\_\_\_