EPA Stakeholders Workshop
GHGI & Subpart W

Subpart W Revisions to Reduce Unnecessary Burdens and Improve Accuracy

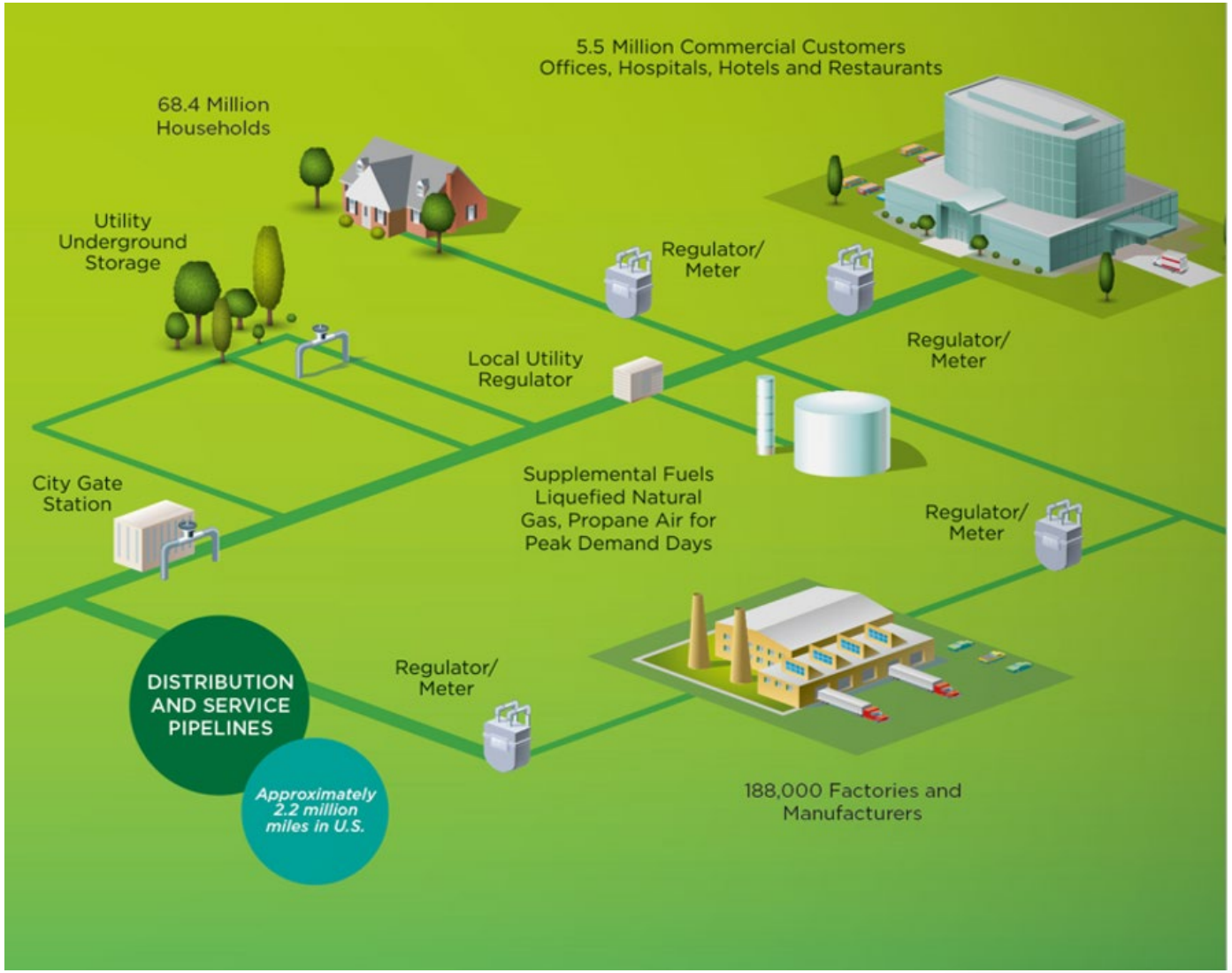
Pamela A. Lacey
Chief Regulatory Counsel | Oct. 17, 2018

Overview

1. Who we are
2. GHG Inventory using new emission factors shows declining methane emissions nationwide
3. Old Emission Factors for Distribution Mains in Subpart W differ from GHGI - should update for consistency and greater accuracy - so *companies* can also demonstrate declining emissions
4. Emission factors can now replace annual Subpart W leak surveys and direct measurements for gas distribution and compression to reduce unnecessary burdens

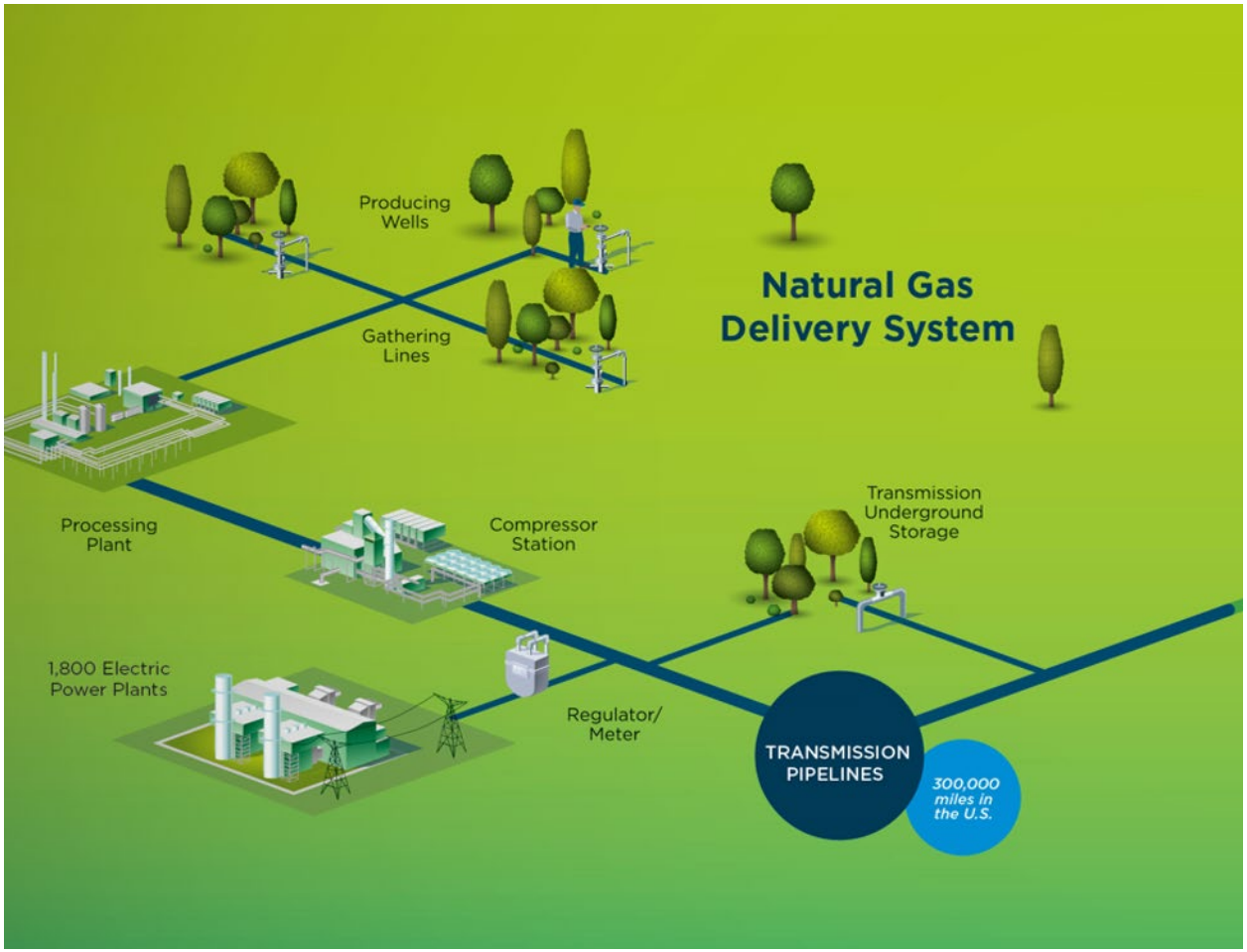
The American Gas Association (AGA), founded in 1918, represents more than 200 local natural gas utilities that deliver natural gas to 177 million Americans nationwide. In addition, AGA's broader membership includes natural gas pipelines, Canadian local distribution companies, natural gas gatherers, marketers and storage companies and more than 350 associate members who provide critical products and services to the natural gas industry.

Who We Are - AGA Represents Downstream natural gas systems



Source: American Gas Association Playbook 2018

Some AGA Members also operate Natural Gas Transmission & Storage



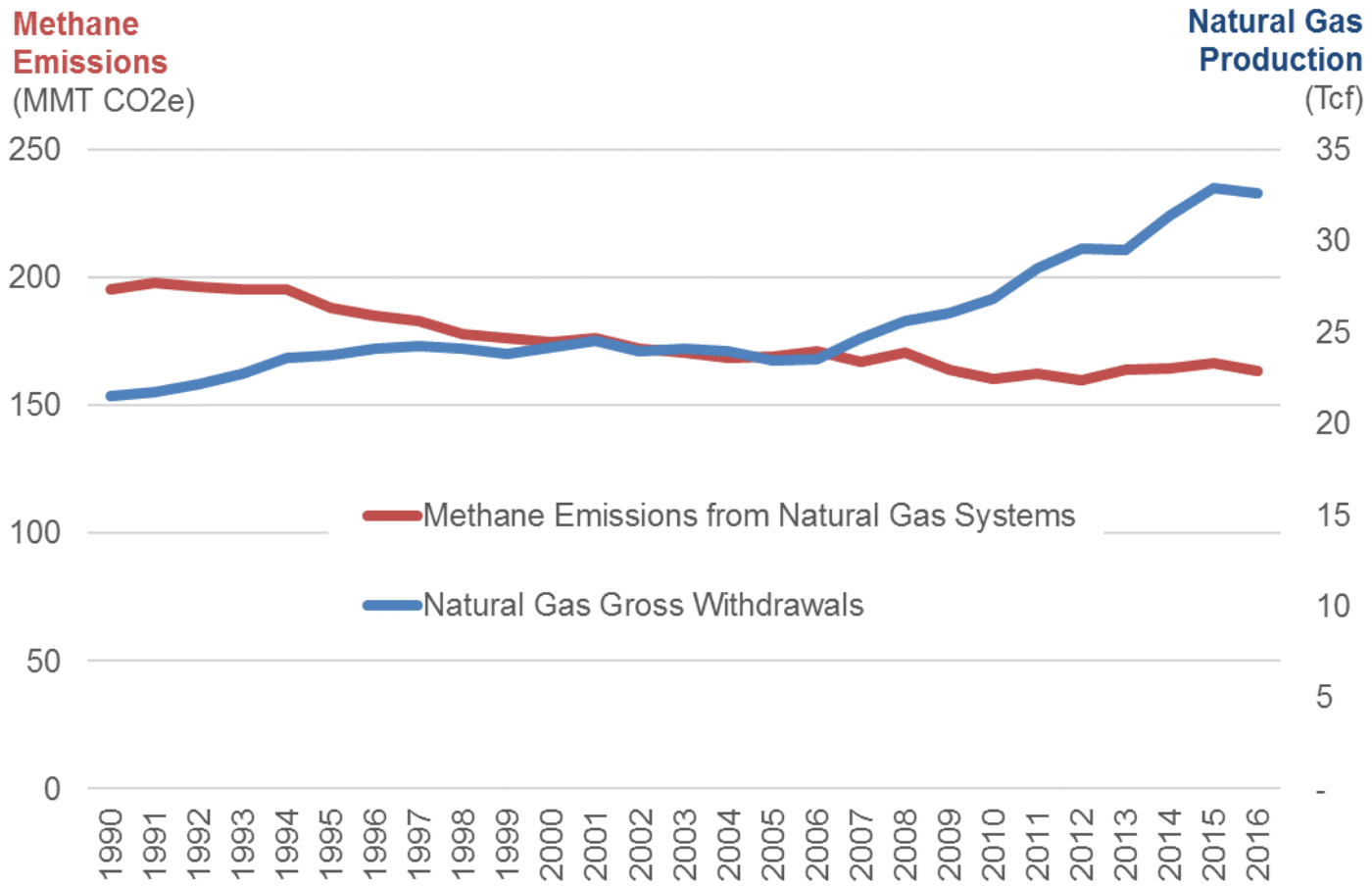
Source: American Gas Association Playbook 2018

2. Context: New Data in GHGI Show Emissions are Declining Nationwide

- **EPA Greenhouse Gas Inventory uses updated emission factors for natural gas distribution based on Lamb 2015 data**
- Updated data shows annual methane emissions from **natural gas distribution systems *declined* 72 percent from 1990 to 2016.**
- The natural gas emissions rate of production from distribution systems is now less than **0.1 percent**.
- The industry-wide **natural gas emissions as a rate of production (the "leakage rate") is to 1.2 percent**—a level still well below even the most stringent thresholds for immediate climate benefits from coal to gas switching.

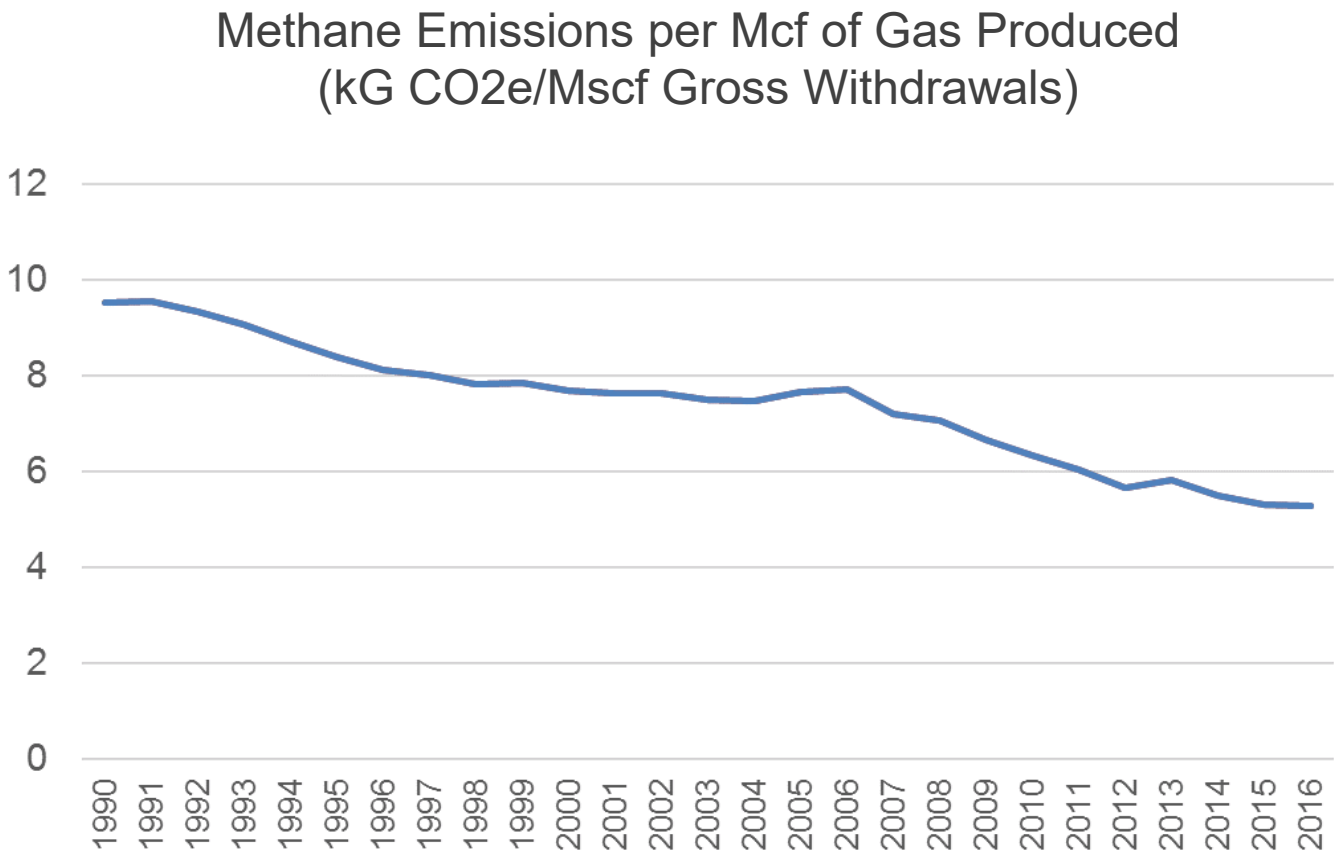
The 2018 EPA *Inventory* reveals once again that the natural gas distribution systems have a small emissions footprint shaped by a declining trend.

Methane emissions have declined even as gross natural gas withdrawals climbed 53 percent.



Source: EPA *Inventory of U.S. Greenhouse Gas Emissions and Sinks: 1990-2016*
Energy Information Administration

Methane emissions per unit of natural gas produced have declined continuously since 1990



Down 44% since 1990

Includes methane emissions from petroleum production based on the natural gas fraction of total energy content produced from oil wells.

Source: *Inventory of U.S. Greenhouse Gas Emissions and Sinks: 1990 – 2016*
Environmental Protection Agency

3. Subpart W Distribution EFs Based on 1990s Study - Inconsistent with Updated GHGI Emission Factors Based on 2015 Study

	Subpart W	EPA Inventory
Mains: Population Emission Factors—Distribution Mains, Gas Service (scf/hour/mile)		
Unprotected Steel	12.58	5.11
Protected Steel	0.35	0.57
Plastic	1.13	0.17
Cast Iron	27.25	6.86
Services: Population Emission Factors—Distribution Services, Gas Service (scf/hour/service)		
Unprotected Steel	0.19	0.09
Protected Steel	0.02	0.01
Plastic	0.001	0.001
Copper	0.03	0.03

Updating EFs in Subpart W would Improve Consistency & Accuracy

Benefits:

- Allow individual natural gas utilities to demonstrate their company's progress in reducing emissions
- Improve Accuracy & Consistency with GHGI
- Eliminate possible public confusion & improve credibility of emission estimates
- Facilitate use of updated EF's by voluntary Methane Challenge Program – while remaining consistent with Subpart W

Two Issues – Explain in Preamble:

- New protected steel main EF is actually higher
- Emission reductions for some pipe replacements may appear smaller, but emissions overall are lower

4. Reduce Burdens in Subpart W – Replace Leak Surveys with Emission Factors

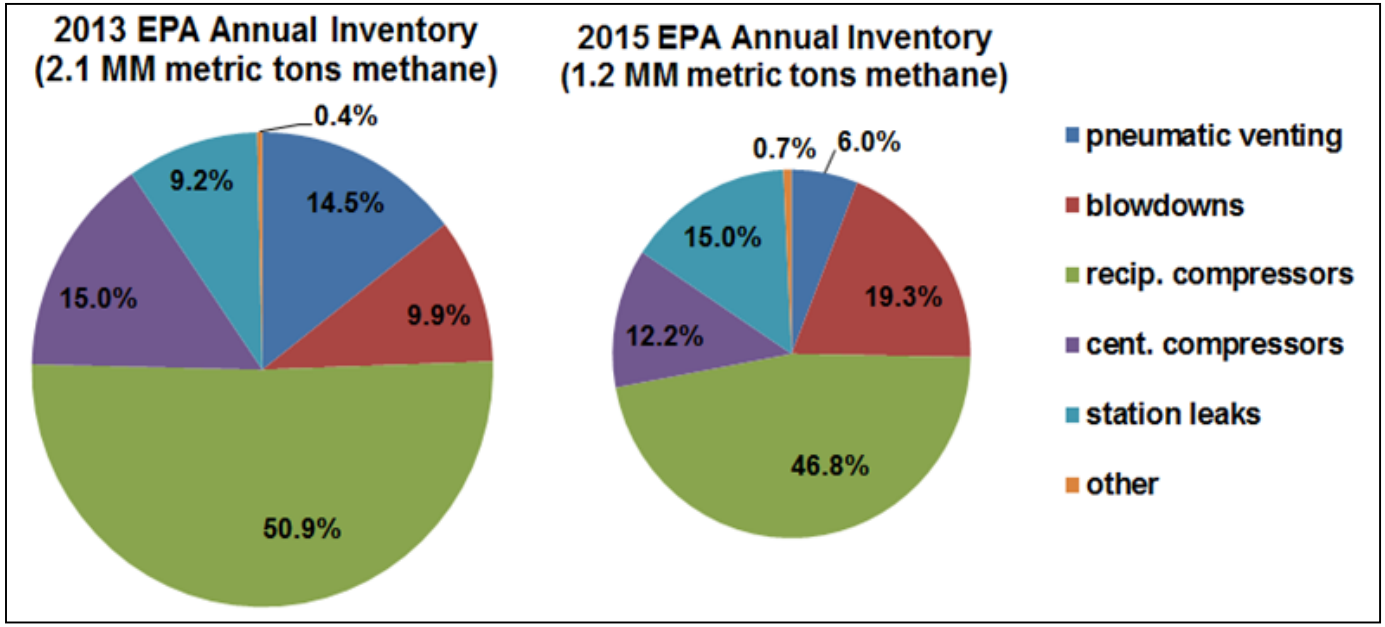
- DOT pipeline safety required leak surveys will still take place
- No further need for duplicative EPA Subpart W surveys using different timing and criteria
- Original purpose: EPA lacked data
- EPA now has abundant data – It is time to convert that data into emission factors
- Provide Subpart W Emission Default Factors for:
  - Transmission to Distribution (T-D) Stations
  - Transmission Compression Stations
  - Underground Storage Compression
  - LNG Terminals
- Resources could be better used to enhance safety and reduce emissions
- *Exception:* Allow option for companies to develop a company-specific emission factor based on their own survey data (would allow them to demonstrate exceptional performance)

Subpart W – Replace Compressor Direct Measurements with Updated EFs

- **Subpart W requires direct measurement of key compressor methane sources due to concerns – *in 2010* – about available data**
  - Compressors identified as a key methane emissions source for T&S in 1996 EPA/GRI study, annual GHG inventory, and more recent industry-EDF study
- **Fast forward to 2018 -- We now have abundant data – It is time to replace burdensome direct measurements with updated emission factors**
  - Subpart W has required annual measurements of compressor vents & rod packing at >500 facilities since 2011
  - A Pipeline Research Council International (PRCI) project compiled 6 years of Subpart W data from PRCI members and published a report in April 2018 that presents updated compressor EFs
  - PRCI provided report to EPA OAQPS in association with EPA reconsideration of Subpart OOOOa (e.g., current best estimates of leak emission trends)

EPA GHG Inventory Should Also Use Subpart W Data to Update T&S Emission Factors

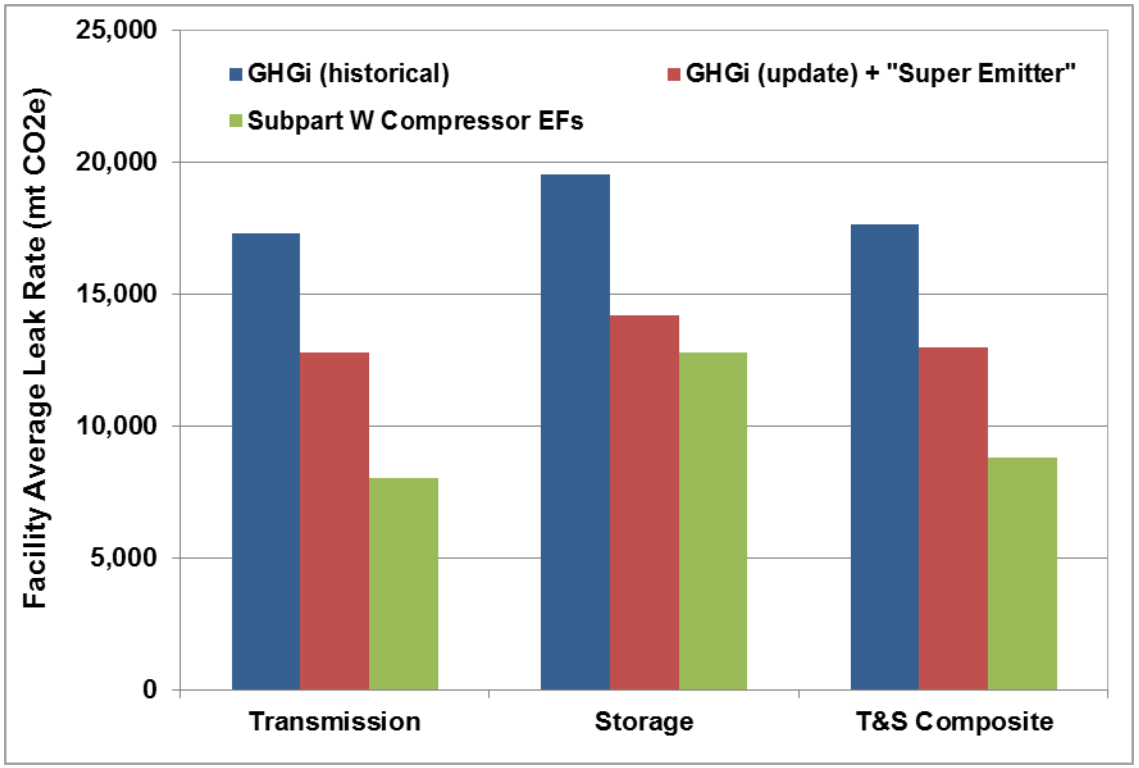
- EPA Updated Transmission & Storage emission factors for Inventory in 2016 – showed emissions decreased
- Now EPA should further update the EFs to reflect robust Subpart W data
- Charts show the relative % of Compressor Station emissions from leaks and vents by source type



PRCI Subpart W Data Analysis

- PRCI collected and analyzed 2011 – 2016 Subpart W data from its members: ~2/3 of facilities that report to GHGRP
- Two PRCI reports:
  - "GHG Emission Factor Development for Natural Gas Compressors" (released in April 2018; Paper presented at Gas Machinery Conference (October 3, 2018)
  - "Subpart W GHG Emissions for Transmission and Storage Station Leaks, Blowdowns and Pneumatic Devices(planned release in 4th quarter 2018)
- Compressor EF report vetted *14,375 "reliable" measurements* from transmission compressor stations and storage facilities
  - Acoustic device measurements were eliminated due to negative bias / false zeroes (i.e., would have decreased EFs)
- 10,595 measurements used for compressor EFs

Updated Compressor Emission Factors Based on Subpart W Reported Data Show Reduced Emissions



Conclusion

1. **EPA should revise Subpart W:**
   - **Update emission factors for gas distribution mains to reflect new data & be consistent with GHG Inventory**
   - **Replace leak surveys of T-D Stations with new emission factors based on robust reported data**
   - **Replace direct measurements of T&S compression leaks and vents with emission factors based on robust reported data – as analyzed by PRCI**
2. **EPA should also update the T&S compression emission factors in the GHG Inventory to reflect the robust data reported under Subpart W as analyzed by PRCI**

Pamela A. Lacey
Chief Regulatory Counsel
American Gas Association
placey@aga.org

AGA.org

TrueBlueNaturalGas.org

Twitter.com/AGA_naturalgas

Facebook.com/naturalgas

Instagram.com/aga_natgas

The American Gas Association, founded in 1918, represents more than 200 local energy companies that deliver clean natural gas throughout the United States. There are more than 74 million residential, commercial and industrial natural gas customers in the U.S., of which 94 percent — more than 70 million customers — receive their gas from AGA members. Today, natural gas meets more than one-fourth of the United States' energy needs.

www.aga.org