# International Gas Union - Methane Emissions Challenge Publications

- *MEASURE*
- *DOCUMENT*
- *REDUCE*


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CH4 Emissions Industry Meeting
Geneva
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# IGU Group of Methane Emissions Experts

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- **Shell** (UK) Sue-Ern Tan (replaced Steve Schofield)
- **Santos**’ (Australia) Susie Smith, *General Manager Carbon and Sustainability*
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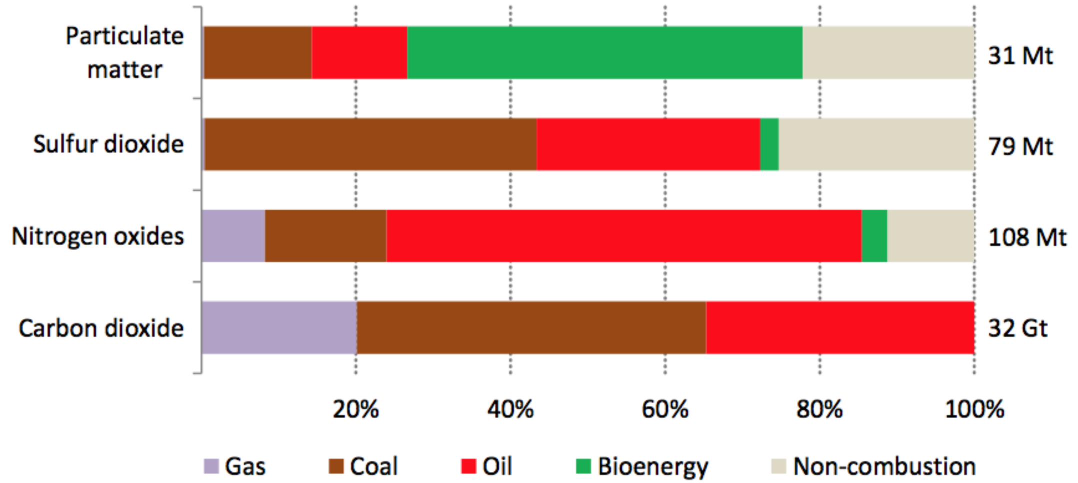
- **USA Presidency (US)** Terrence Thorn
- **IGU Public Affairs** Menelaos (Mel) Ydreos/Tatiana Khanberg

# Share of energy related emissions of selected air pollutants and CO2

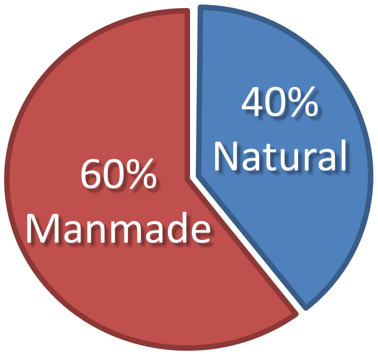
**Figure 1: Share of natural gas in total energy-related emissions of selected air pollutants and $CO_2$**




Data are for 2015: Mt = million tonnes; Gt = gigatonnes

# IEA WEO 2017 Methane Chapter

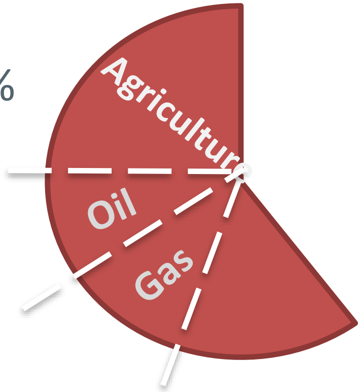
## Methane Budget



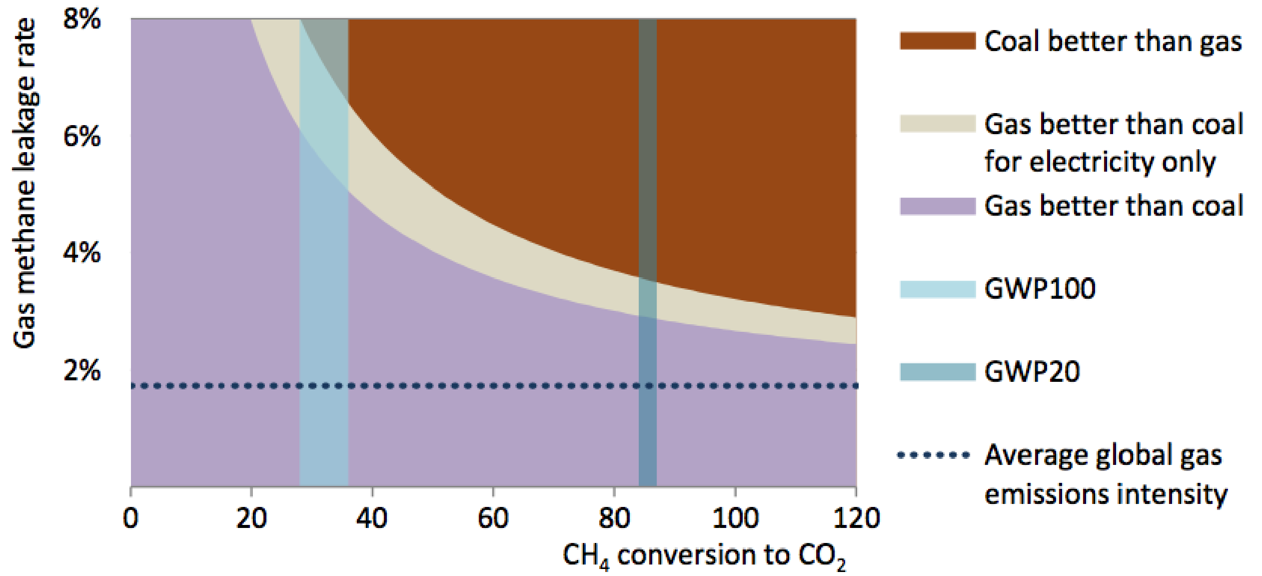

570Mt Total Methane Emissions

Anthropogenic emissions budget allocation:

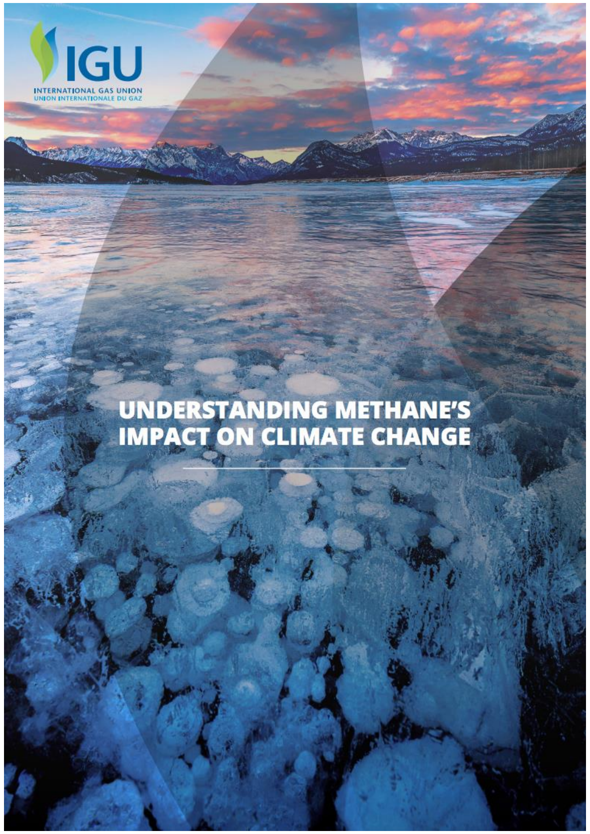
- **Agriculture** is the largest source ~ 25%
- **Oil & Gas** responsible ~ 22% (76Mt) roughly equally split
- **Gas** ~ 12% (42Mt)

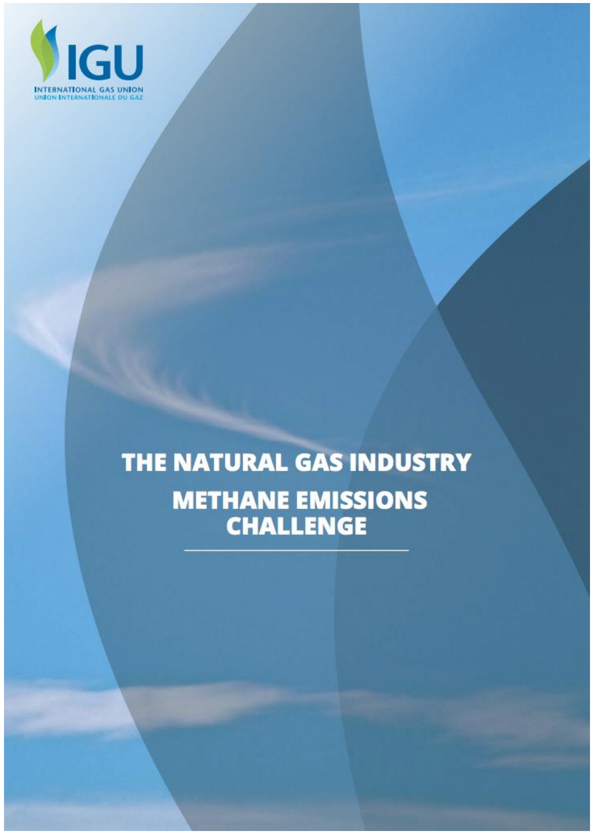


IEA reports that at the average global gas emissions intensity gas is 45-55% cleaner than coal



# Recent IGU Reports on Methane Emissions



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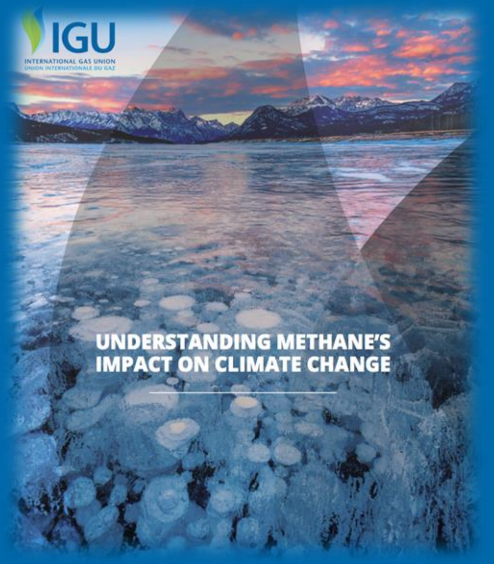



**Understanding Methane's Impact on Climate Change**

- Target Audience: policymakers
- In simple terms report lays out the IGU position and **supporting arguments for GWP 100** and against GWP 20
- Key premise: GWP metric is a policy choice that carries a trade-off between deliberately scoring a short-term results, but at the cost of meeting the long-term Paris Agreement obligations

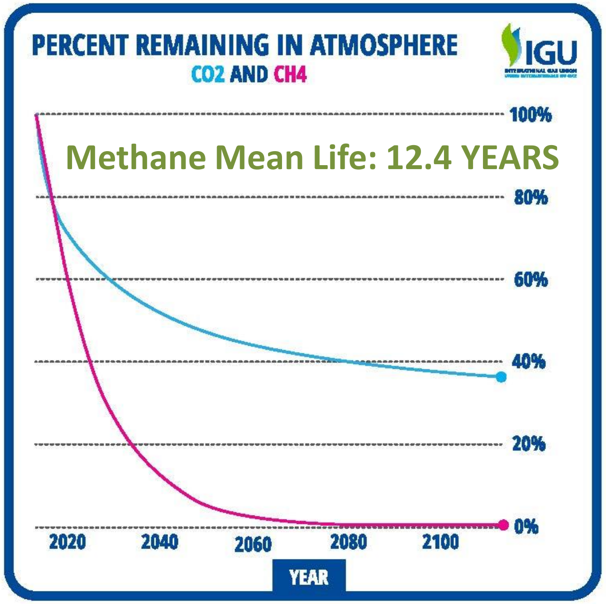

## A long-term problem

## IPPCC bases all impacts on the basis of GWP100

- Climate change is a uniquely long-term problem.
- Emissions from industrial activities that occurred over a century ago continue to contribute to the greenhouse effect we experience today, because $CO_2$ released then will stay in the atmosphere for millenia.
- These effects are continually compounded, as the world emits more $CO_2$.
- Using a very short timeframe of 20 years for estimating climate impacts ignores these long-term compounding effects.
- A 20 year timeframe increases the relative importance of short-lived climate pollutants (SLCP's), like methane, and that of short-term climate responses, diminishing the priority placed on combating total warming.

# Short and Long Term Impacts of Carbon and Methane in the Atmosphere

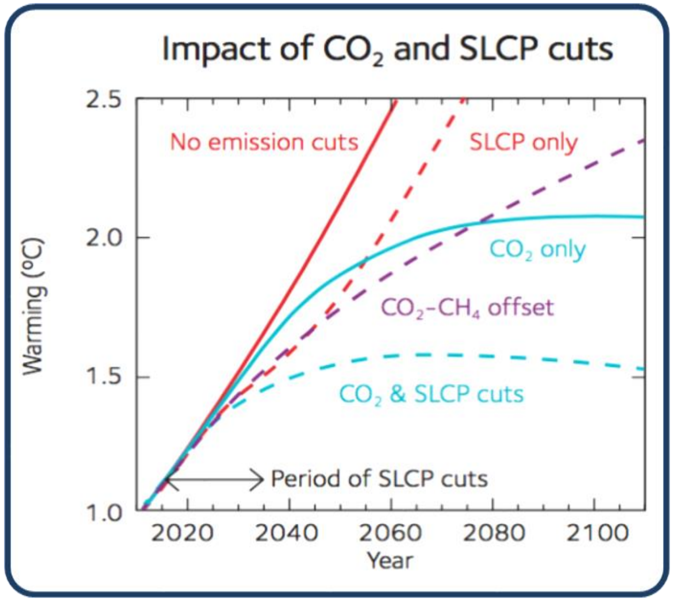
**The most appropriate factor to quantify methane impact is GWP 100**




**Methane GWP 20: 72 – 86; GTP 20: 67**

**Methane GWP 100: 25 – 34; GTP 100: 4**

**Using GWP20 only, shifts focus disproportionately to short-term and away long-term climate impacts**




*Source: Myles, A. Short-lived Promise? The Science and Policy of Cumulative and Short-Lived Climate Pollutants*. Oxford Martins Policy Paper, 2015.

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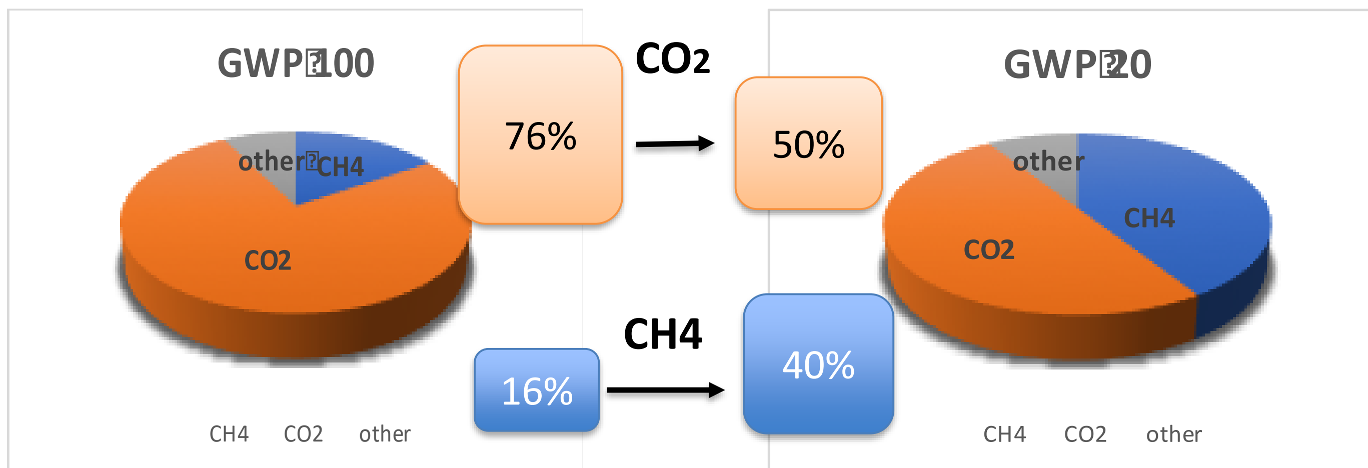
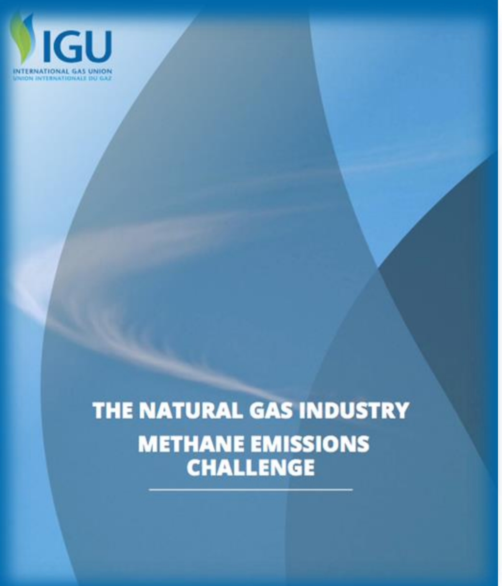
# GWP 20 Detracts from the Long Term Goal

The effect of recalibrating GHG impact estimates from 100 to 20-year GWP values is highly problematic for long-term climate outcomes, as it will alter the GHG mix significantly, reducing the importance of $CO_2$.




GWP 100 represents a balanced view of the GHG impacts and of the climate problem – it is a balance between 20 and 500 year timeframes that have been considered in prior studies.




**The Natural Gas Industry's Methane Emissions Challenge**

- Audience: IEA, regulators, researchers, debate influencers
- Explains the challenge from the industry perspective and stresses that the industry has been active in this area for decades
- Lays out clear **policy recommendations**
- Presents 7 Case Studies of successful reductions programs from across the value chain: [upstream] U.S. shale, Australia processing; [Tx] Spain, Italy, Netherlands; [Dx] Mexico; [Staff] Russia
- **Key Premise: methane is an industry priority and it is transparent about its challenges and efforts**

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# Measure, Document, Reduce

# Pending Associate signatory to the Guiding Principles

The IGU acknowledges the importance of reducing methane emissions from the gas value chain and is working with the industry in areas of measurement, reporting, and reduction by:

- Improving confidence in the accuracy of measurement, quantification, and reporting of methane emissions through sharing of latest developments in field and academic research.
- Encouraging systematic reduction of methane emissions through operations management, including the sharing of the best approaches to enhanced measurement, quantification, reporting and reductions, within and across the value chain.
- Promoting the rapid advance, development, and commercial deployment of cost effective methane detection, measurement, and reduction technologies.
- Encouraging scientific research into the sources of methane emissions and understanding of methane in the environment.

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## The IGU supports prudent, outcome-driven policy regimes for greenhouse gas (GHG) mitigation.

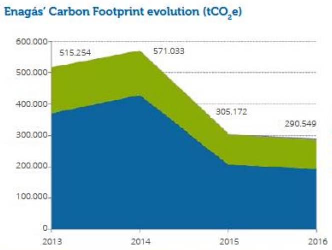
Effective policies to minimize anthropogenic methane emissions are those that take **balanced approaches**, consistently addressing all contributing sources of methane emissions across the economy. The IGU recommends that as governments formulate policies for reducing methane emissions, they:

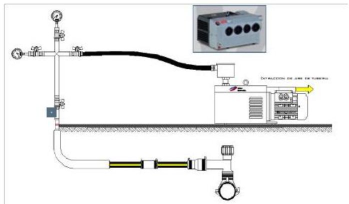
- Commit to a **balanced GHG reduction strategy**, which covers long and short-lived pollutants. Avoid disproportionate emphasis on short-lived pollutants, like methane, to secure the long-term target of meeting $CO_2$ reductions •

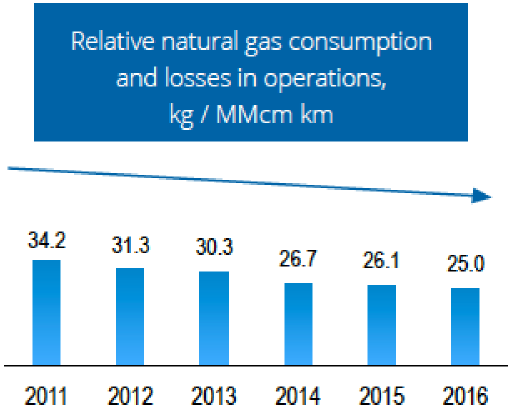
- When regulation is deemed necessary, choose a **performance-based** approach over compliance-based to ensure policies are economically efficient – balancing regulation with market-based mechanisms. This means that policies should seek to maximize the value of reductions, by allowing sufficient flexibility for the industry to identify opportunities for investment to achieve the highest reductions.

- Support **technology development and deployment** to accelerate innovation in methane detection and measurement. In order to accelerate the pace of innovation and de-risk new technology, governments need to partner with industry and fund essential research and development.

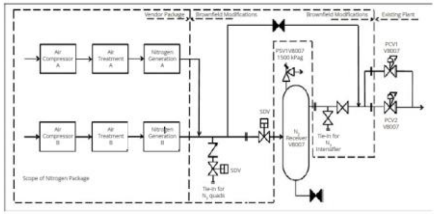
# 7 Case Studies

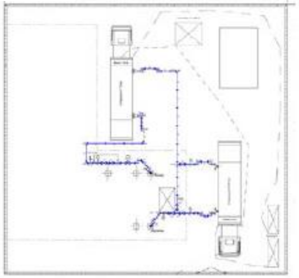


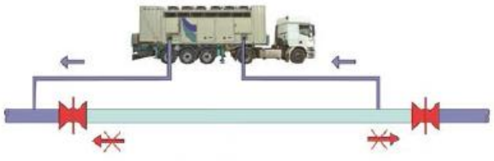



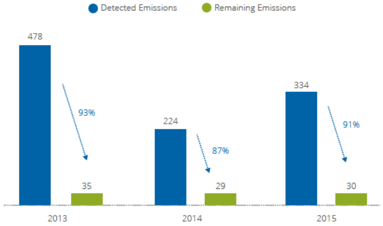


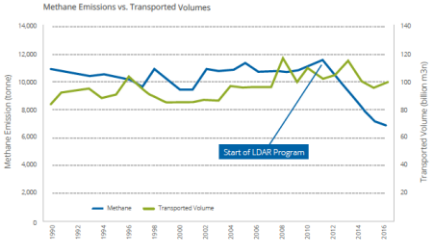








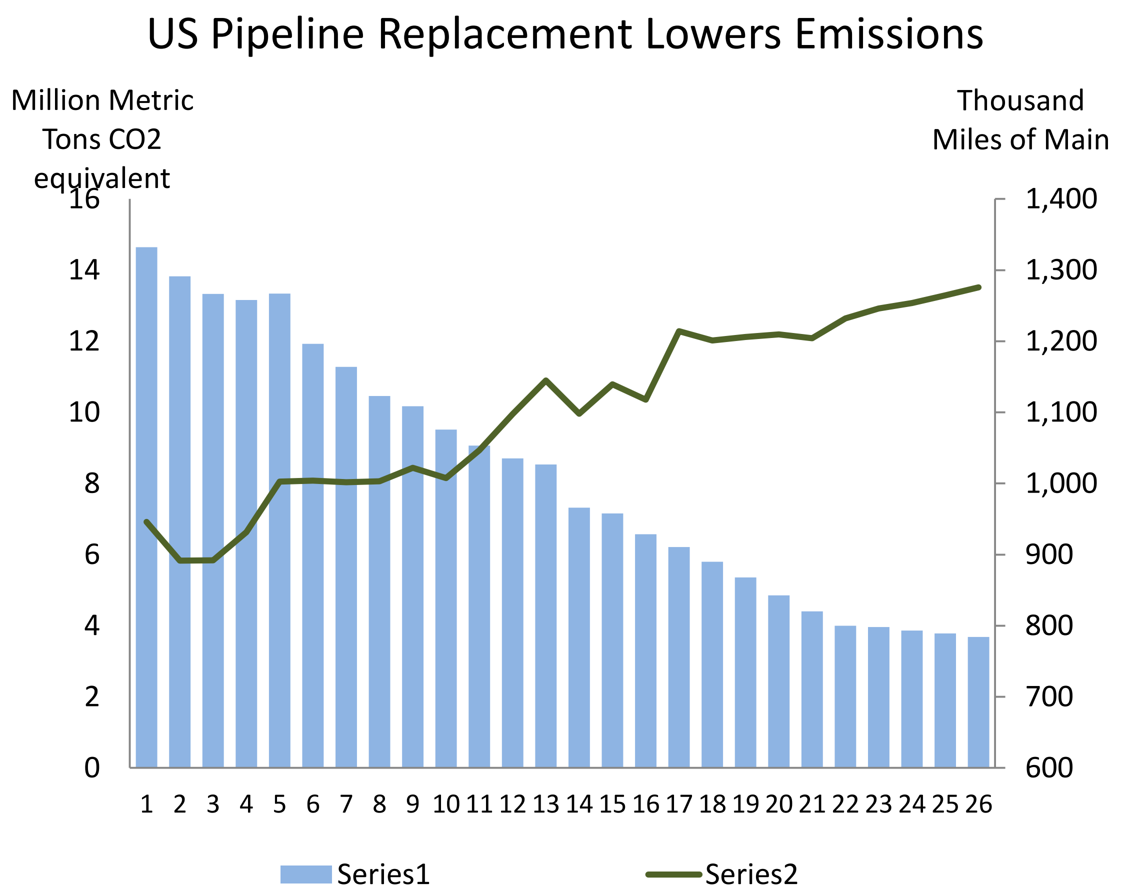


Miles of installed main has increased 34% since 1990.

Even with this tremendous growth, estimated methane emissions from pipeline leaks declined 74%.

A consequence of increased removal of unprotected steel & cast iron pipe replaced with plastic & protected steel.




Source: AGA chart and calculations using data from EPA *Inventory of U.S. Greenhouse Gas Emissions and Sinks: 1990-2014*

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# Hope to see you at WGC 2018