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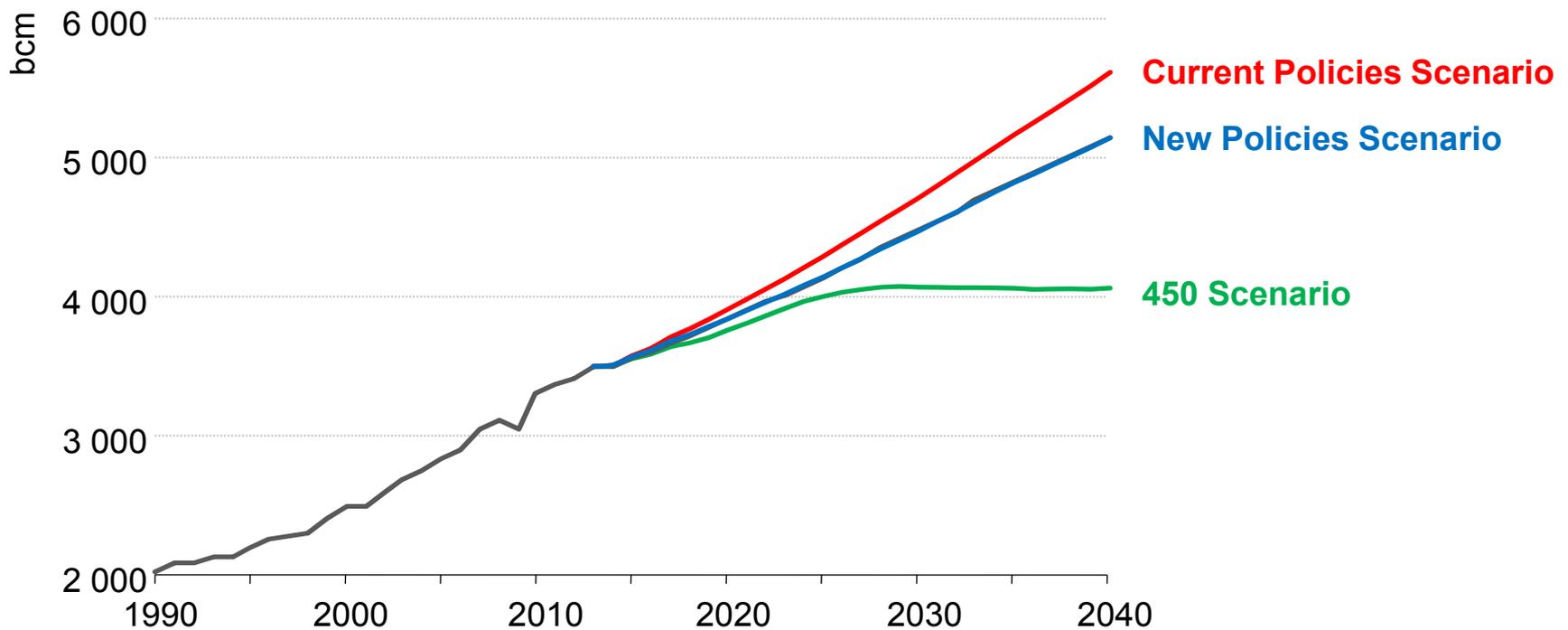
World Outlook Energy 2015

Global Methane Emissions
Washington D.C., 29 March 2016

- *What is the global outlook for natural gas and methane emissions?*
- *What is the role of methane emissions in the climate change debate?*
- *What is the IEA planning on doing on methane emissions from oil and gas?*

Plain sailing for natural gas?

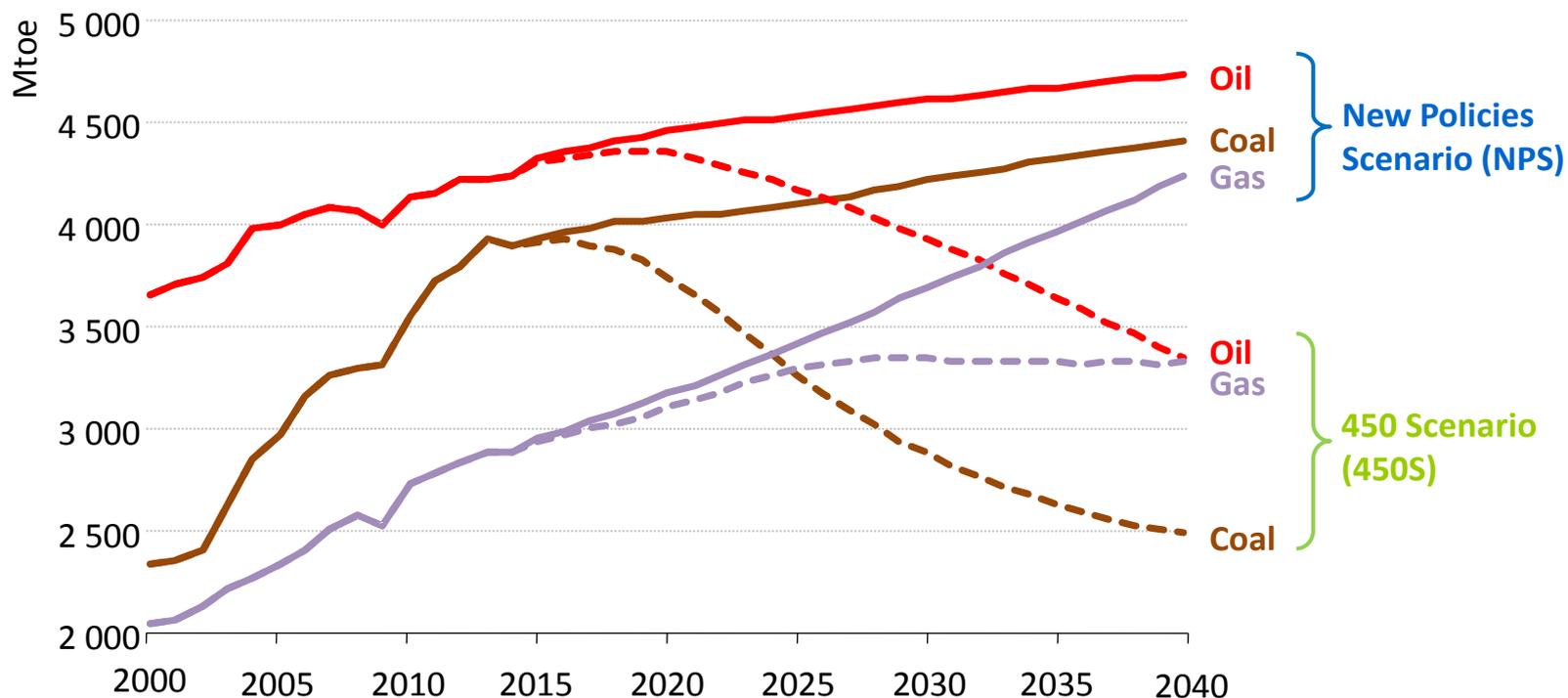
World natural gas demand by scenario



Global gas demand grows in all scenarios; in the New Policies Scenario demand of 5.2 tcm in 2040 brings gas towards parity with coal & oil in the global energy mix

Gas retains a global foothold in a stronger climate policy scenario

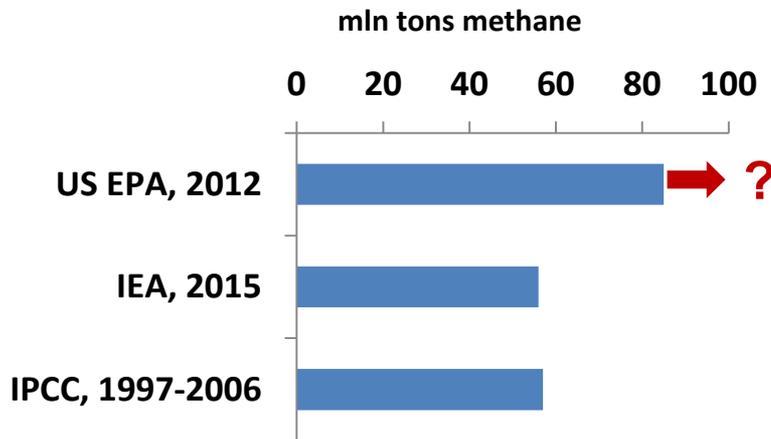
Global fossil-fuel demand by scenario



Where it replaces more carbon-intensive fuels or aids the integration of renewables, natural gas can be a good fit for a gradually decarbonising energy system

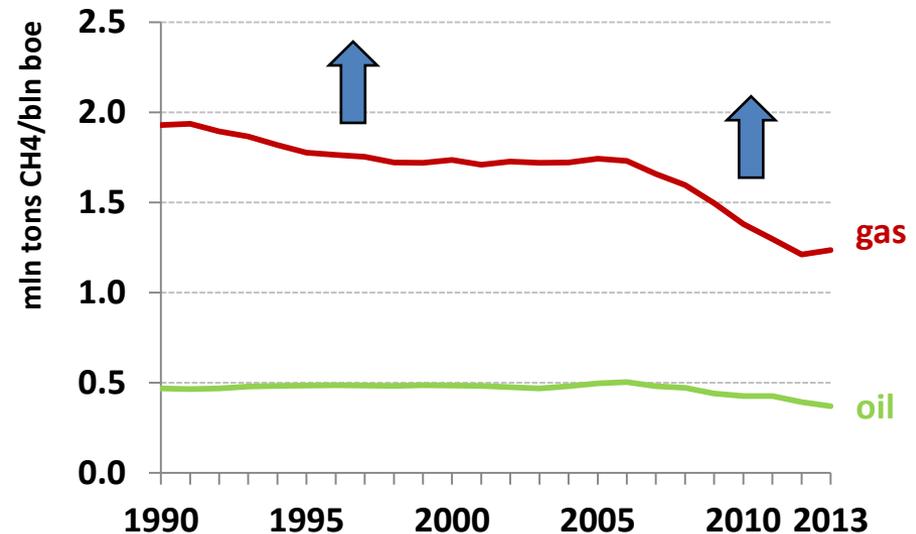
What are the trends in methane emissions from oil and gas operations?

Global methane emissions from oil and gas industry



Global emission estimates vary widely – due to lack of data and inconsistent measurement methods

US methane emissions trend for oil and gas industry

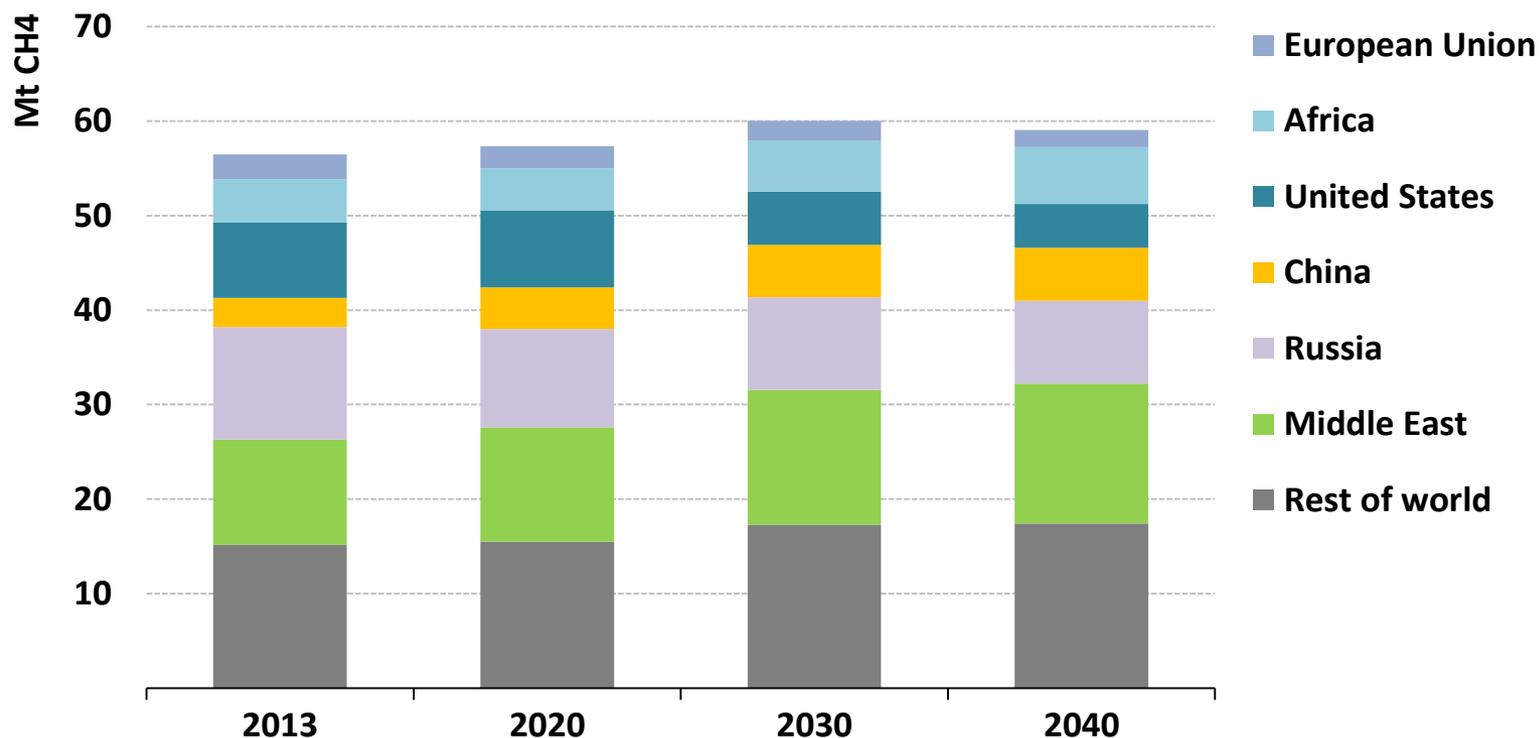


Source: US EPA and EIA 2015

US data suggests an overall declining trend in methane emission factors over the last 20 years.

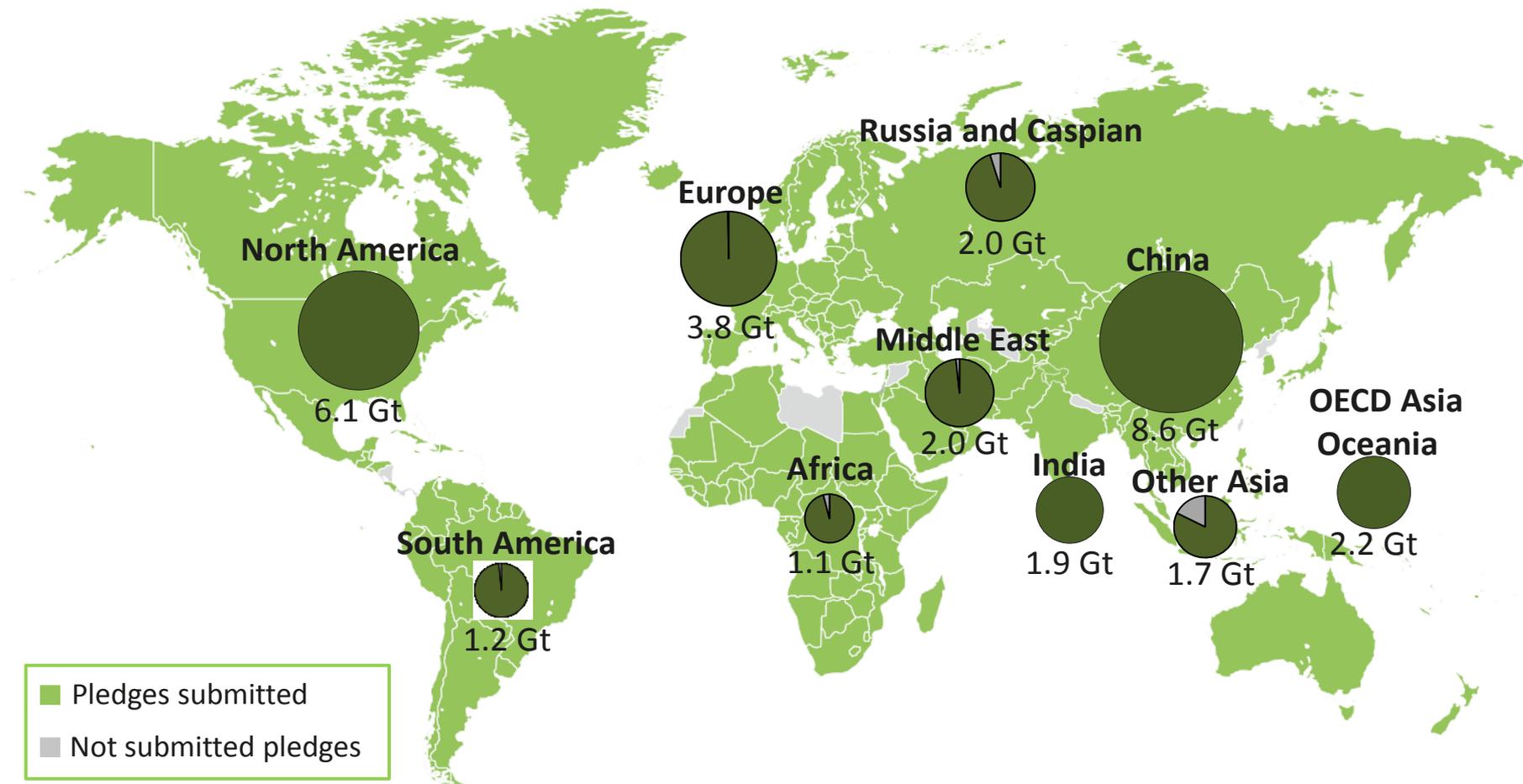
Methane emissions: a credibility issue for natural gas?

Global methane emissions from the oil & gas sector by region in NPS



Fugitive methane emissions from the global oil & gas sector remain high, despite advances & pledges by some countries to reduce emissions

The coverage of CP21 climate pledges is impressive...



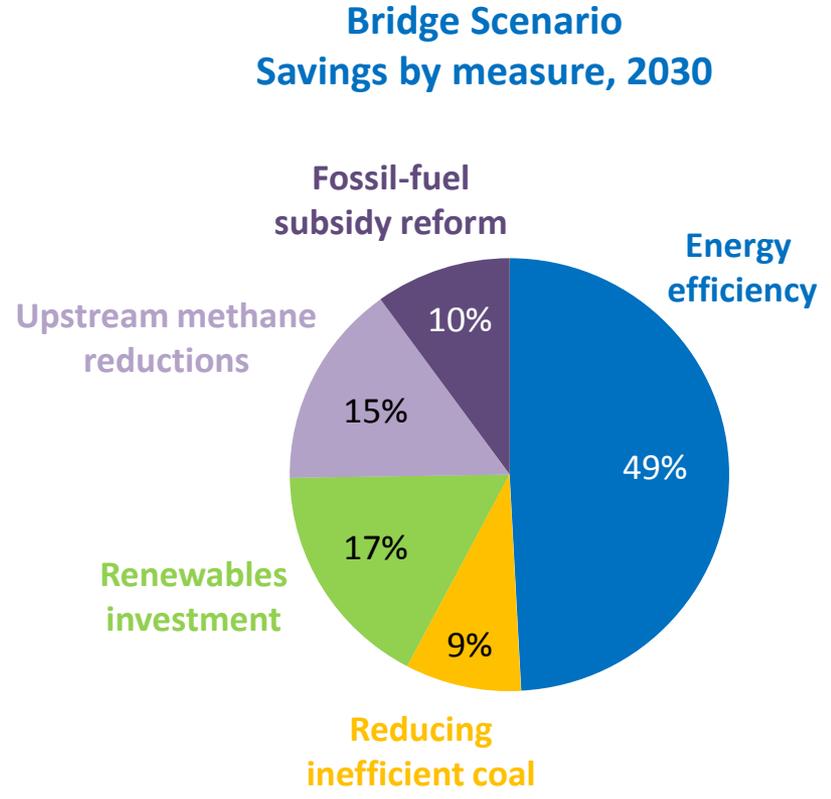
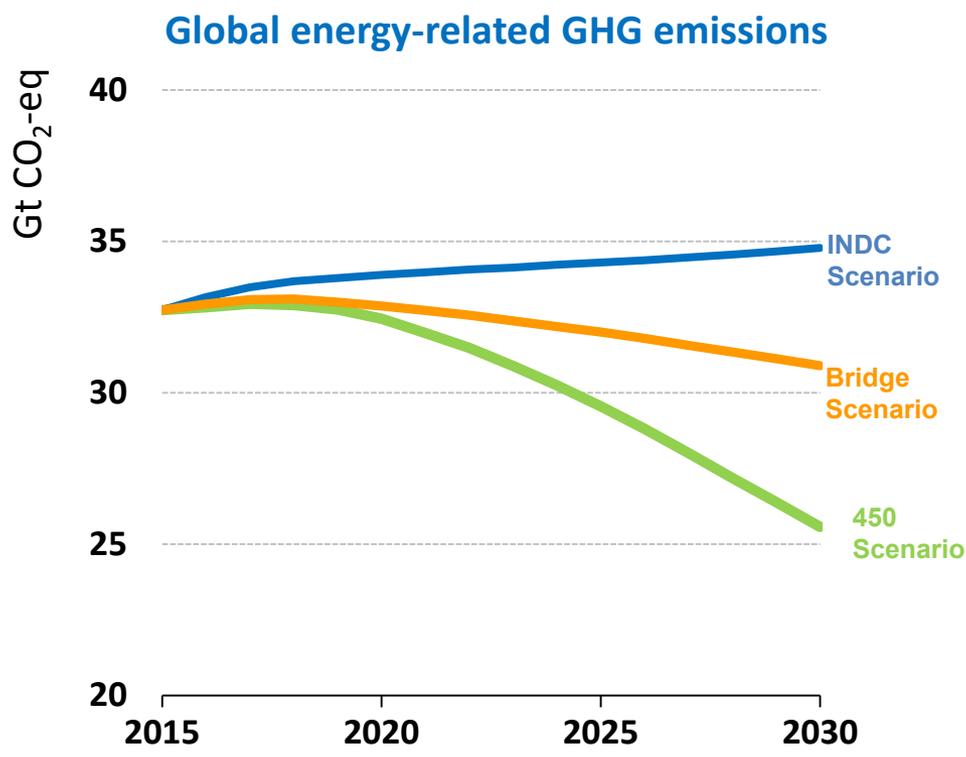
Pledges from countries that account for 95% of global energy-related GHG emissions; their full implementation would be consistent with a temperature rise of 2.7 °C

...but what about methane emissions ?

*The INDCs of **four countries** specifically mention methane emission:*

- ***USA:** achieve a 40-45% reduction in methane emissions from 2012 levels by 2025 from oil and gas production*
- ***Canada, Mexico and Gabon:** reduce methane emissions from oil and gas production*

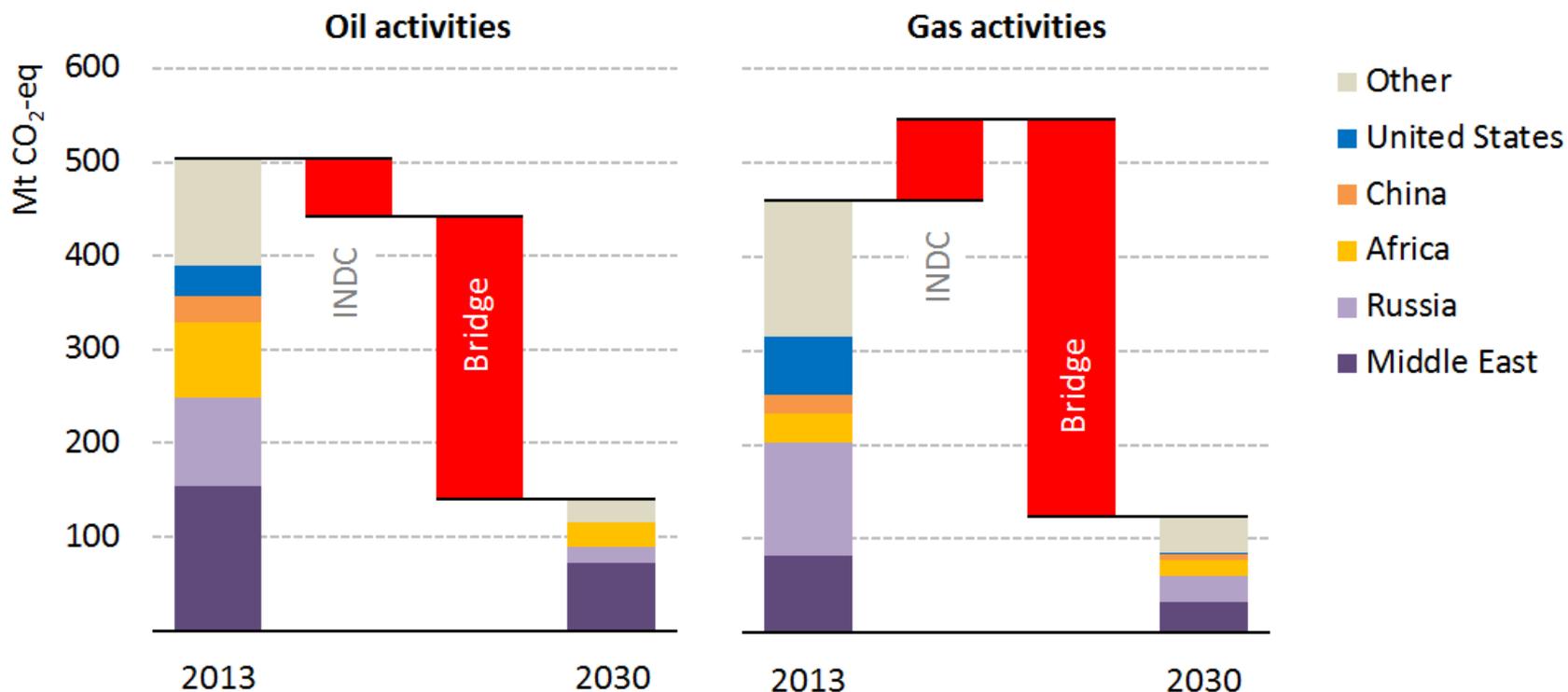
COP21 Bridge Scenario: peak in GHG emissions in next 5 years



IEA proposed five measures – shown in a “Bridge Scenario” – using only proven technologies & without harming economic growth

Reducing Upstream Methane Emissions

Global oil and gas upstream methane emissions and required reductions



Reductions are achievable with existing technologies but implementation will take time

What is the IEA planning to do next?

- *Global modeling of methane emissions has a high degree of uncertainty. Just like most organizations, the IEA relies on measurements and data collected by others.*
- *In absence of new and more comprehensive data, focus will shift towards outlining best practices for policy recommendations.*
- *The IEA seeks inputs from energy sector stakeholders in exploring the topic further.*

- **Addressing climate change is imperative and reducing methane emissions is one of the key measures that can help secure a peak in global GHG emissions by 2020 and thus provide a reasonable chance of limiting global warming by 2degC.**
- **Technologies for reducing methane emissions are available but action is required now to achieve a peak in emissions.**
- **Challenges ahead:**
 - *The global and regional extent of methane emissions is still poorly understood.*
 - *How can we tackle the more difficult and costly emission sources?*
 - *Availability of cheap but reliable constant monitoring solutions?*
 - *What remote sensing technologies can be used globally to identify major sources and track progress?*
- **The discussion and actions are progressing, albeit at a slow pace.**



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