

# Quantifying Global Methane Emissions

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# EDF-catalyzed methane research

## Coordinated, Peer-reviewed Studies

Diverse research teams studying emissions across the supply chain, across multiple regions

## Multiple Methods

Researches used a variety of aircraft, vehicle and ground-based measurements to quantify methane emitted across the oil and gas supply chain in U.S. and Canada.

## Significant Improvement in Data

Nearly 40 articles published thus far in peer reviewed journals



'If we thought it was bad, it's worse:' Alberta badly underestimates methane emissions, new research shows

*The difference between official estimates and the measured results suggests the province's energy industry could have to double its planned cuts*



**Drilling & Production**



**Gathering & Processing**



**Transmission & Storage**

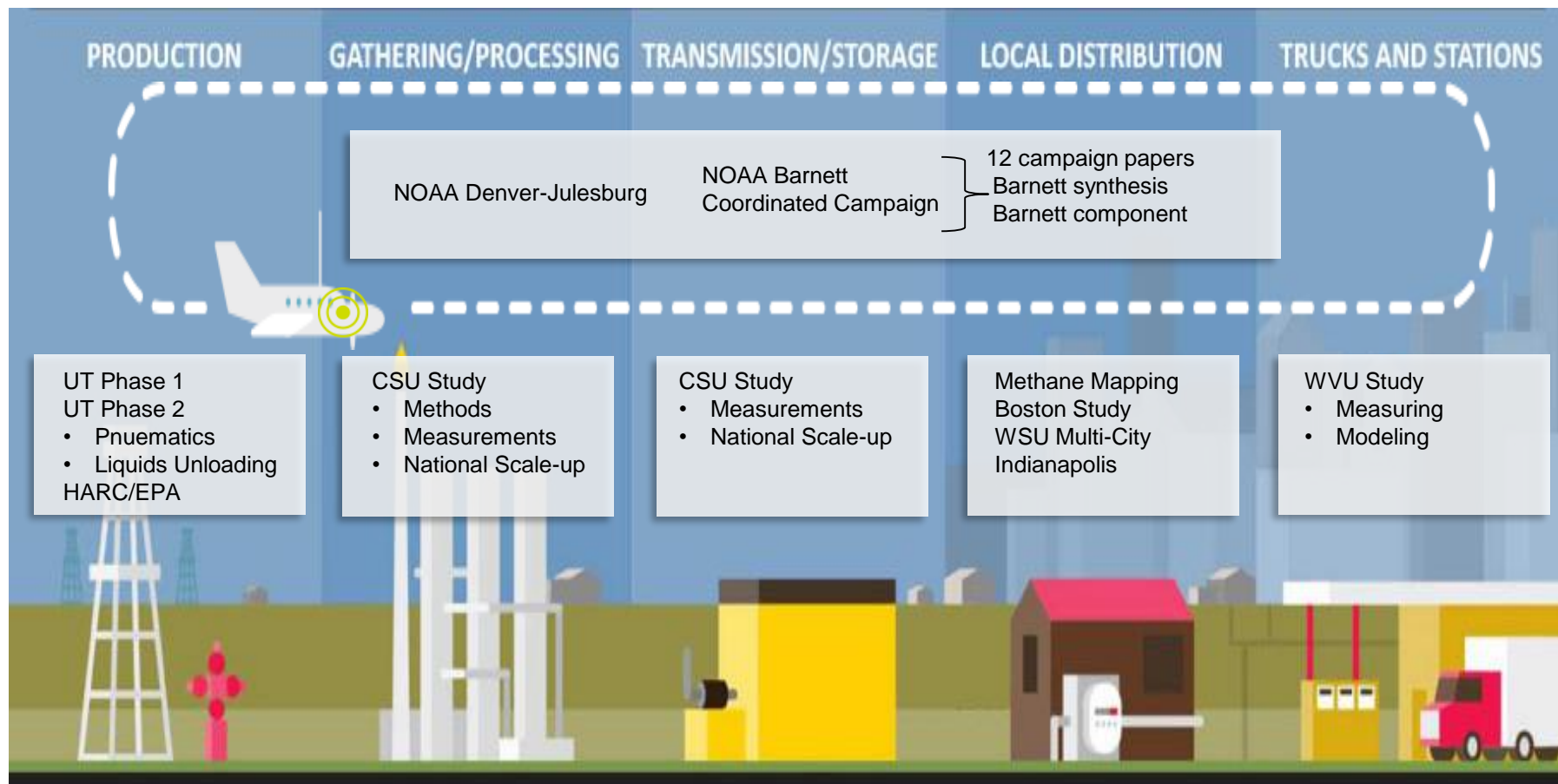


**Local Distribution**



**Regional Research**

# U.S. supply chain studies



Pilot Projects

Gap Filling

- Abandoned wells
- Helicopter IR Survey

Synthesis Projects

- NETL LCA
- Synthesis**



## Lessons Learned in North America



### Higher Emissions

As a whole, oil and gas methane emissions are higher than conventional estimates suggest



### Super Emitters

Recurring Problem that needs to be addressed



### Methods Agree

Top-down and bottom-up methods yield similar results, opening many measurement possibilities.

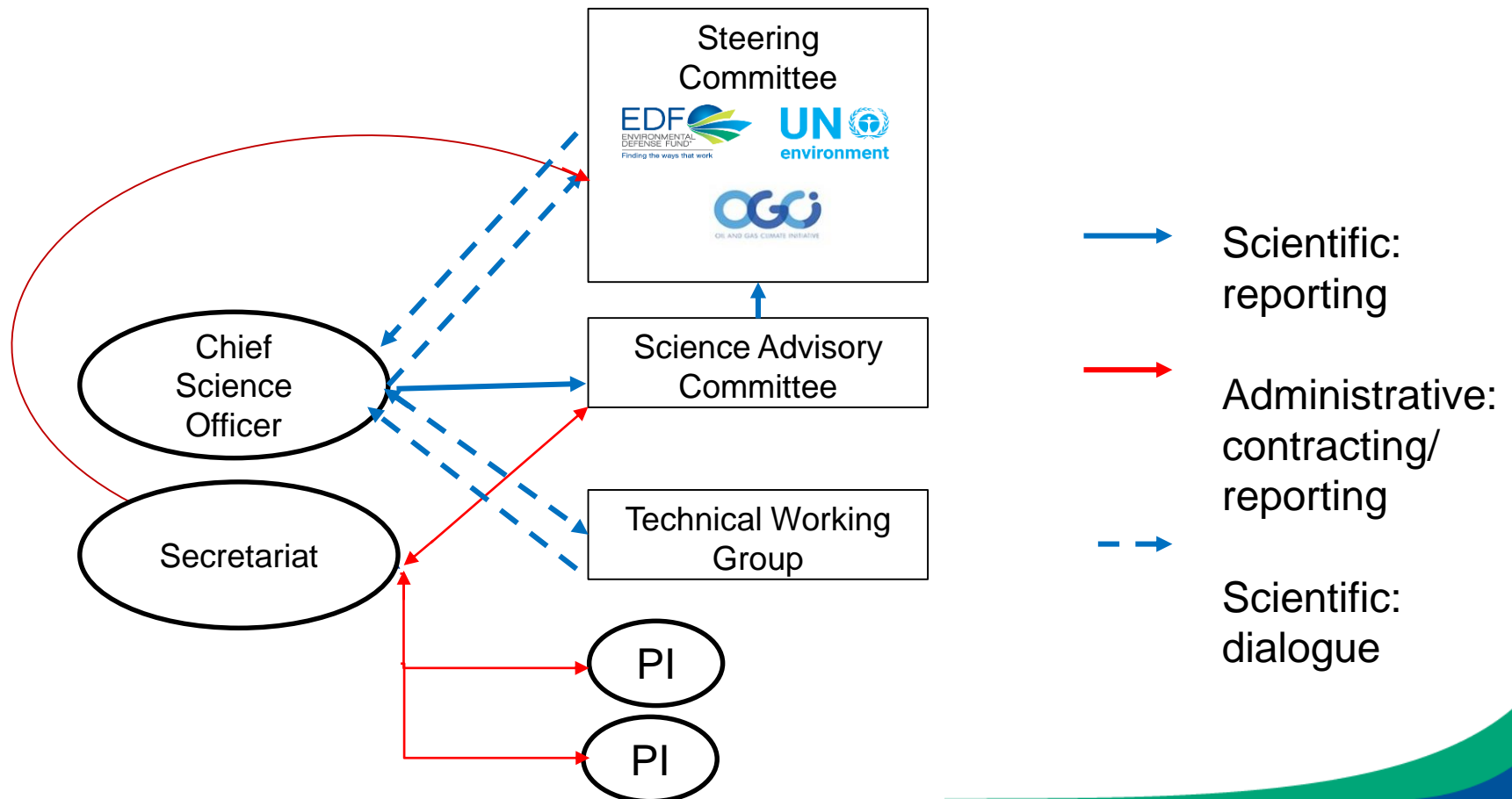
# IEA Methane Analysis

- Globally, oil and gas emits around 75 million metric tons of methane
- 50% of emissions can be reduced at no net cost
- By 2100 – same climate benefit as eliminating all coal plants in China
- Uncertainty in how countries plan to reduce emissions

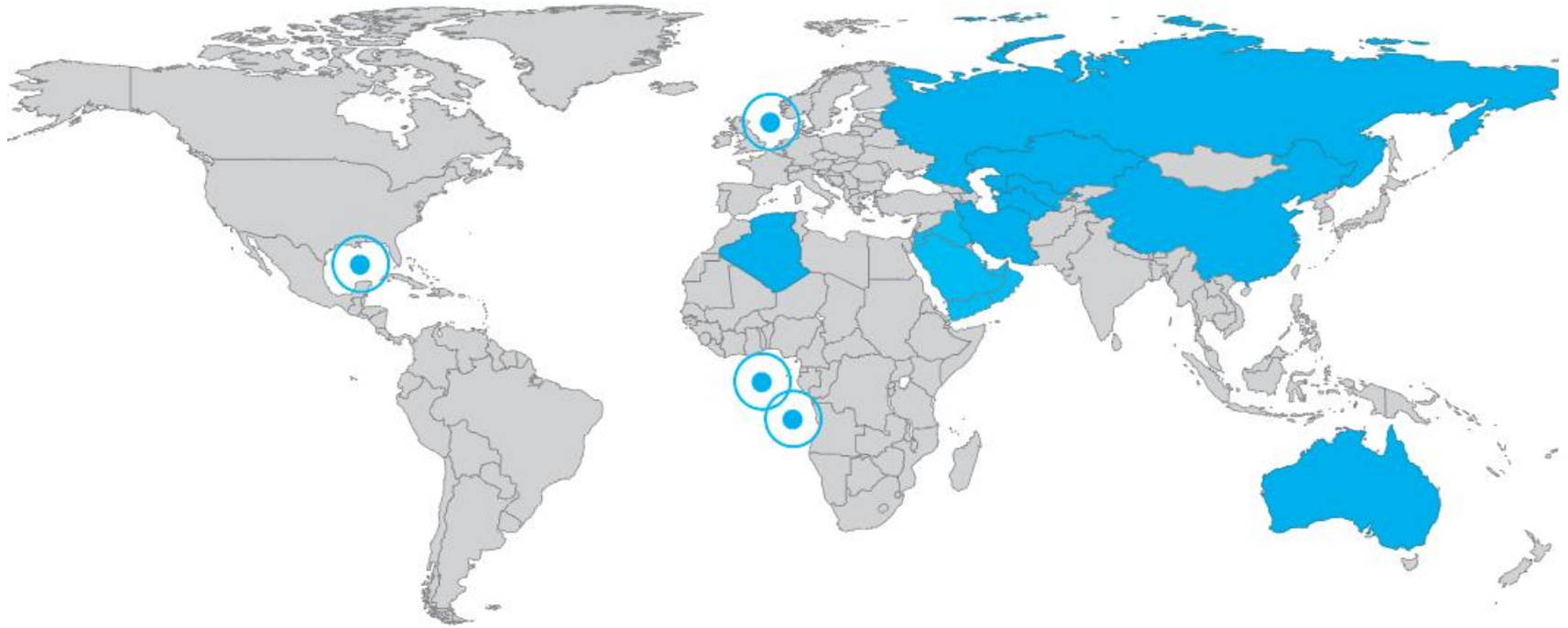


# International Methane Studies Governance

**OBJECTIVE:** Conduct the research necessary to accurately estimate methane emissions from the global oil and gas industry supply chains, and to publish those results in reputable peer-reviewed journals

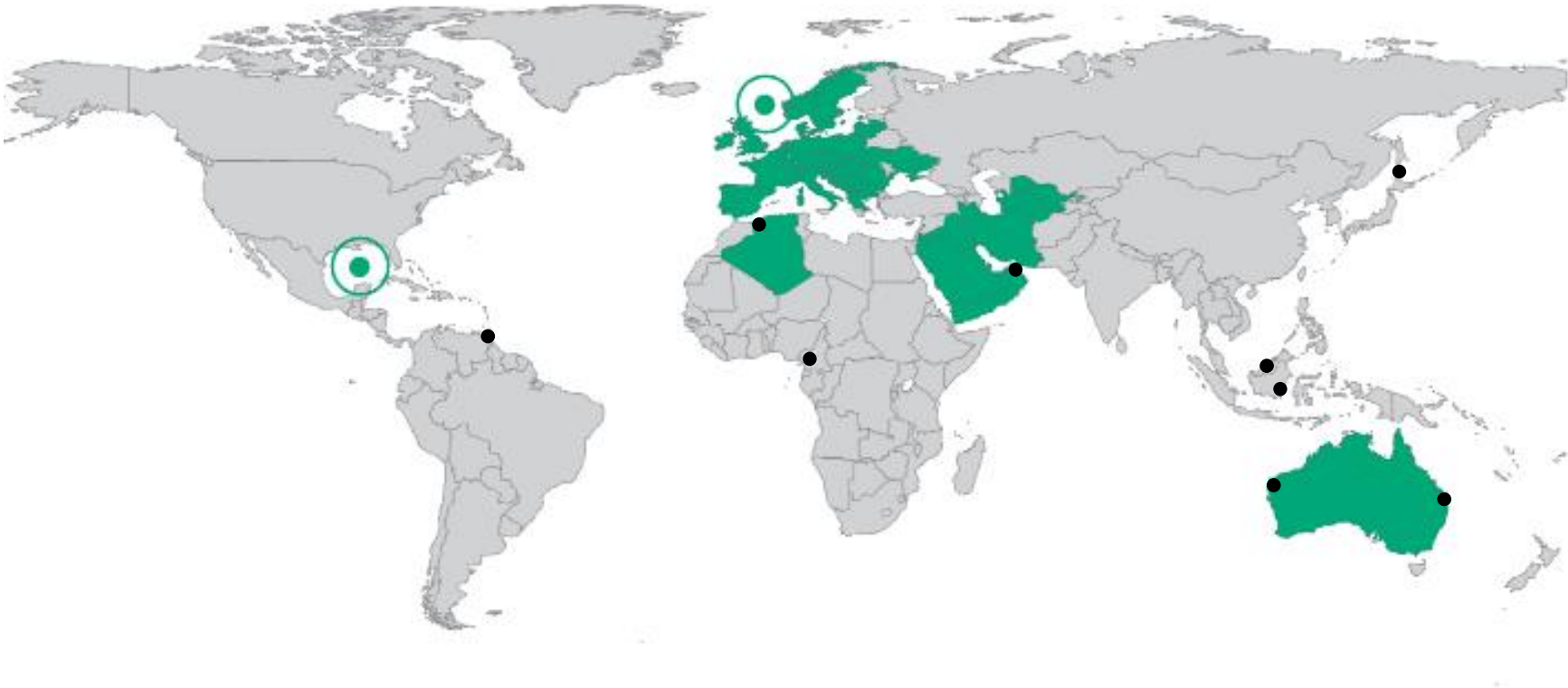


# Key gaps



- LNG and offshore emissions also a gap, but some offshore areas have more data than others.

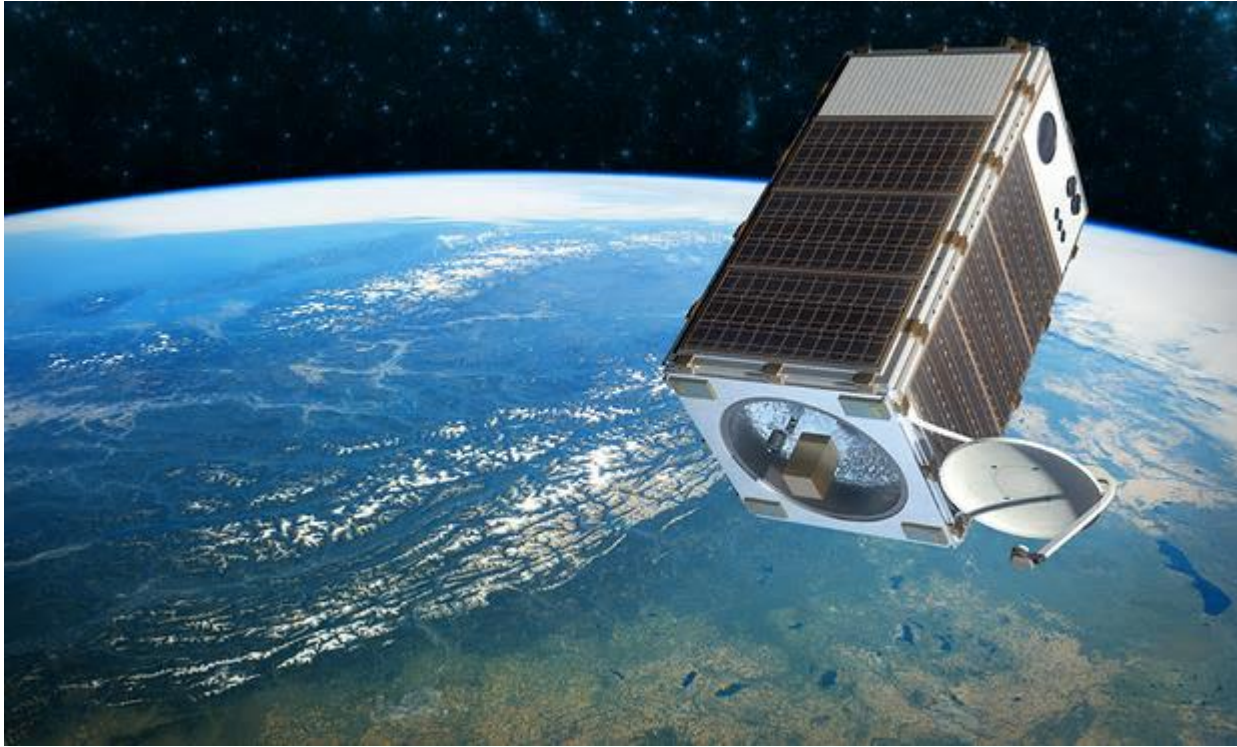
# New research



- Launch of new methane research
- NPL Top 10 LNG facilities



# What's Next?



MethaneSAT is being designed for a new level of precision and to regularly monitor about 80% of global oil and gas production