Objective: To promote significant reductions in methane and black carbon emissions from the oil and gas sector:

- 45% emissions reductions in methane emissions over estimated 2015 levels by 2025[^1]
- 60-75% reductions by 2030[^2]

Partners:
European Commission (Lead), Netherlands (Lead), Environmental Defense Fund (EDF), Nigeria, UN Environment, Argentina, Center for Clean Air Policy (CCAP), Clean Air Task Force, Colombia, Canada, Mexico, Norway, United Kingdom, United States of America
Marginal abatement cost curve for oil- and gas-related methane emissions by mitigation measure, 2019

Total possible abatement: 59314 kt (73%)
At no net cost: 32809 kt (40%)
Ongoing activities

1. Global Alliance to Significantly Reduce Methane Emissions in the Oil and Gas Sector by 2030
   Started in 2019
   **Partners:** Clean Air Task Force, Environmental Defense Fund (EDF), UN Environment

2. Oil & Gas Methane Partnership
   Started in 2015
   **Partners:** EDF, European Commission (EC), UN Environment

3. Oil and Gas Peer-to-Peer Regulatory Support
   Started 2017, Partners:
   **Partners:** Argentina, Center for Clean Air Policy (CCAP), Clean Air Task Force, Colombia, Nigeria

4. Technology Demonstration: Cost-effective Flaring Mitigation Opportunities
   Started 2015
   **Partners:** Canada, Colombia, GLOBE Foundation, International Cryosphere Climate Initiative (ICCI), Mexico, Nigeria, Norway, Stockholm Environment Institute (SEI)
   **Actors:** Carbon Limits, Carleton University, Clearstone Engineering, GHGSat, Pembina Institute, Petroleum Technology Alliance Canada (PTAC)
5. Oil and Gas Methane Science Studies

Started 2017, **Partners**: EDF, EC and OGCI

**Objective**: *To address a critical lack of global methane measurement data in the oil and gas sector to help prioritise company actions and government policies for addressing this important SLCP emissions source.*

Contact: Christopher Konek

- Partners work together on scientific studies to quantify methane emissions
- Collected data will help companies and governments prioritize mitigation actions and policies to reduce methane emissions.

(Courtesy Daniel Zavala-Araiza, EDF)
Assessment of methane emissions from the U.S. oil and gas supply chain

➢ Supply-chain emissions of 13 Tg per year, 2.3% of gross gas production, scaled-up to US-wide
➢ Methane emissions are 60% higher than US-EPA estimates

Table 1. Summary of this work’s bottom-up estimates of CH₄ emissions from the U.S. oil and natural gas (O/NG) supply chain (95% confidence interval) and comparison to the EPA Greenhouse Gas Inventory (GHGI).

<table>
<thead>
<tr>
<th>Industry segment</th>
<th>This work (bottom-up)</th>
<th>EPA GHGI (27)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Production</td>
<td>76 (+19/–1.6)</td>
<td>35</td>
</tr>
<tr>
<td>Gathering</td>
<td>2.6 (+0.59/–0.18)</td>
<td>2.3</td>
</tr>
<tr>
<td>Processing</td>
<td>0.72 (+0.20/–0.071)</td>
<td>0.44</td>
</tr>
<tr>
<td>Transmission and storage</td>
<td>1.8 (+0.35/–0.22)</td>
<td>1.4</td>
</tr>
<tr>
<td>Local distribution*</td>
<td>0.44 (+0.51/–0.22)</td>
<td>0.44</td>
</tr>
<tr>
<td>Oil refining and transportation*</td>
<td>0.034 (+0.050/–0.008)</td>
<td>0.034</td>
</tr>
<tr>
<td>U.S. O/NG total</td>
<td>13 (+2.1/–1.7)</td>
<td>8.1 (+2.1/–1.4)</td>
</tr>
</tbody>
</table>

*This work’s emission estimates for these sources are taken directly from the GHGI. The local distribution estimate is expected to be a lower bound on actual emissions and does not include losses downstream of customer meters due to leaks or incomplete combustion (materials and methods, section S15).
†The GHGI only reports industry-wide uncertainties.
➢ Offshore platforms are emitting twice as much methane than previously estimated
➢ Methane emissions (0.5 Tg per year) correspond to a loss ~ 2.9% of produced gas.
Methane Emissions from Offshore Oil and Gas Platforms in the Gulf of Mexico
Tara I. Yacovitch,* Conner Daube, and Scott C. Herndon
Environmental Science & Technology 2020 54 (6), 3530-3538
https://dx.doi.org/10.1021/acs.est.9b07148

➢ Shallow-water platforms much larger sources than deep-water facilities
➢ High emitters: Top 2 located in shallow water account for 20% of emissions, with rates up to 190 kg/hr
Thank you for your attention

Graciela B. Raga
CCAC - Science Advisory Panel
CCAC - Methane Science Studies - Science Advisory Committee