The Other Gases: The Politics of Methane and Short-Lived Climate Pollutants

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SLCPs: Are they different politically than carbon?

What are Short-Lived Climate Pollutants?

**Short-lived Climate Pollutants**
- **Anthropogenic Sources**
- **Lifetime in Atmosphere**
- **Impacts / Mitigation**

**Black Carbon (BC)**
- Days
- Warm public health

**Methane (CH₄)**
- 12 years
- Reduce food security

**Tropospheric Ozone (O₃)**
- Weeks
- Warm the atmosphere

**Hydrofluorocarbons (HFCs)**
- 15 years
- Increase ice and snow melting

**Long-lived Climate Pollutants**
- **Carbon Dioxide (CO₂)**
- Rapid, deep, and persistent cuts in CO₂ and other long-lived greenhouse gases are necessary to stabilize global temperature rise over the long term.
The Political Logic of HFCs and an American Climate Policy Success Story

HYDROFLUOROCARBONS (HFCs)

CONSUMPTION
HFCs are a group of industrial chemicals primarily used for air conditioning and refrigeration.

LIFETIME IN ATMOSPHERE:
15 YEARS (AVERAGE WEIGHTED BY USE)
Many HFCs are short-lived climate pollutants. The most abundant of these, HFC-134a, is 3,700 times more damaging to the climate than carbon dioxide (CO₂) over a 20-year period.

AVOIDING FUTURE EMISSIONS
HFC emissions will quickly grow without action. Under the Kigali Amendment, countries have committed to reduce the production and use of these gases by 85% by 2050.

ADDED BENEFITS OF ENERGY EFFICIENCY
Almost 80% of the climate impact from cooling comes from the electricity generated to power the equipment.

By 2050:
- Energy efficiency up 2x
- CO₂ down 1.4 Gt
- PM₂.5 down 8%
Bipartisan path to American Innovation and Manufacturing Leadership Act of 2020

- Deep industry divides as producers of climate-friendly chemicals increasingly outnumber HFC producers

- Rapid and aggressive state policy diffusion and diversification during 2019-2020

- International embrace of Kigali, steadily closing markets for US exports
Oil and Gas Methane Venting & Flaring?
Why energy methane policy sounds promising —in theory

Avoid waste of a non-renewable natural resource with commercial value (more like helium than carbon dioxide)

VOCs and related air quality contaminants from highly-visible flares and vented plumes

The Norway Model

Intense climate impacts first decades after release (87 X carbon in 20 years)

"Low-hanging fruit" with numerous no/low-cost abatement options, including new technologies
Why energy methane policy is so hard -- in practice

- Most drilling in low-income rural or urban areas, including most fracking, with state preemption of local role
- Formidable industry associations and highly-accommodating oil and gas commissions in petro-focused states
- Reliance on industry emission estimates, leads to downward measurement bias
- Aversion to addressing idle/orphan wells (700K-3.1M)
- Rapid oil basin depletion under fracking generates “associated gas” surges
The Three Amigos

## Gas flaring volumes 2015-2020 (billion cubic meters)

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## Global Rankings, 2020

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<tr>
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<th>Methane Flaring Volume by Nation, 2020</th>
<th>Oil Production by Nation, 2020</th>
<th>Natural Gas Production by Nation, 2020</th>
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<td>USA</td>
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<td>Canada</td>
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<tr>
<td>Mexico</td>
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# A Political Logic for Methane?

## Methane Production 2015-2020

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<tbody>
<tr>
<td>Higher</td>
<td>USA</td>
<td>Mexico</td>
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<tr>
<td>Lower</td>
<td>Canada</td>
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</tbody>
</table>
Mexico: Less energy, more methane
Canada: More energy, less methane
USA: More energy, more methane
U.S. Cases: Leading Production States
Exceptional state legislative case: Colorado
Exceptional state administrative case: New Mexico
Global Methane Challenge, Anyone?

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Is methane beginning to resemble HFCs?

- Growing divides among energy producers, with expanding interest in containing releases
- Serious policy movement in multi-level systems: Canada, EU, US
- Soft international pact but growing question of using trade and border adjustments to incentivize low-methane gas imports (CBAM)
The Methane Policy Non-Starter