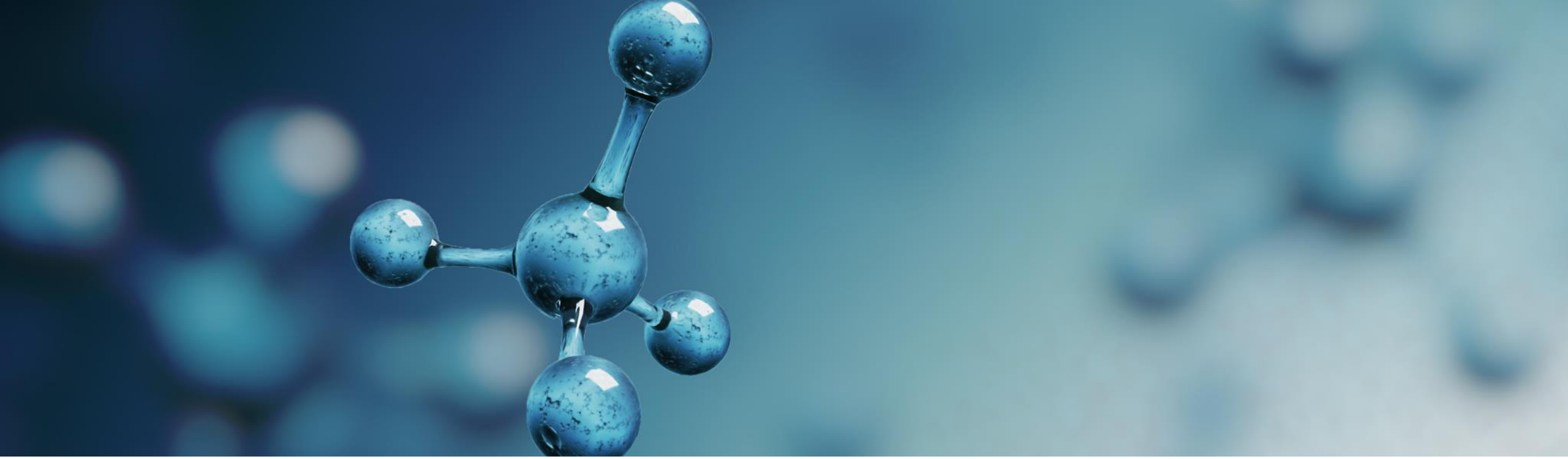
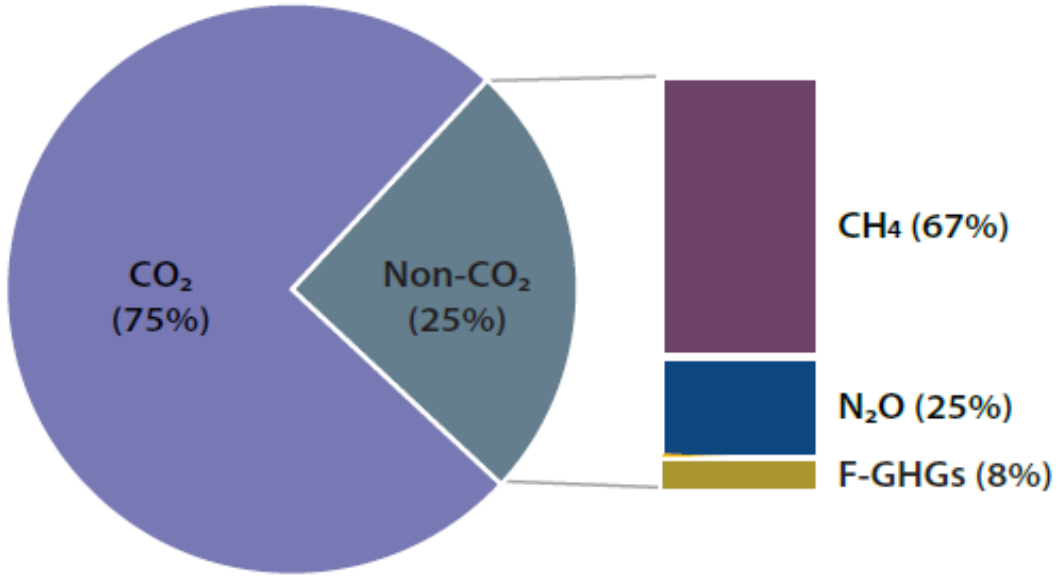


The Case for Action on Methane in Central Asia (& Some Resources to Help)

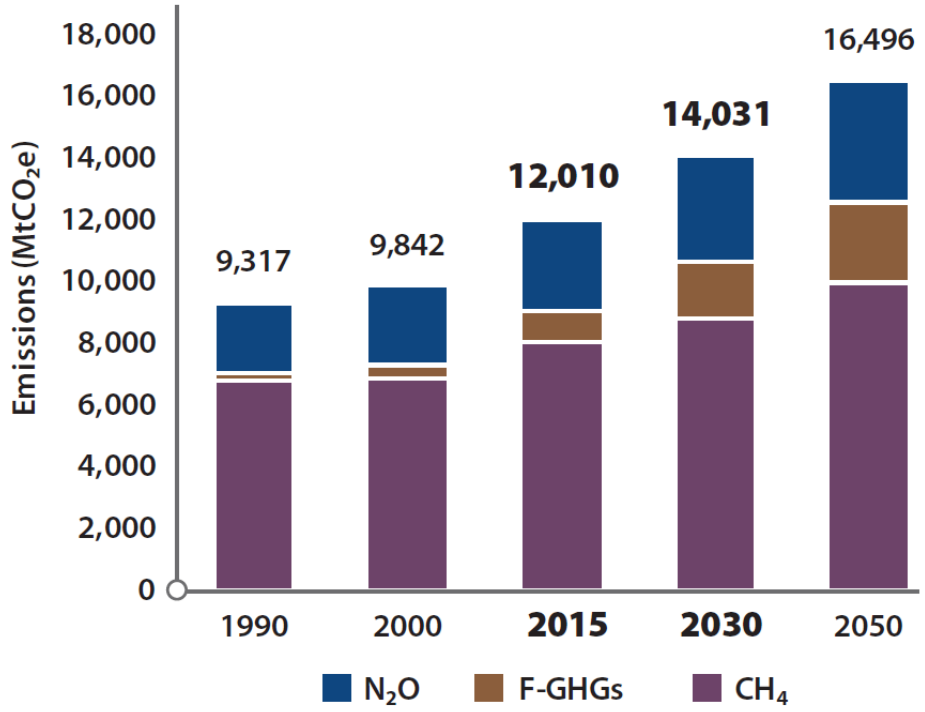
Denise Mulholland
Lead, International Methane Team
Director, Global Methane Initiative Secretariat
US Environmental Protection Agency
7 November 2023

Global Greenhouse Gas Emissions and Methane

Global Non-CO_2 Emission by Gas and Sector in 2015
(Non-CO_2 GHGs = 12,010 $MtCO_2e$)



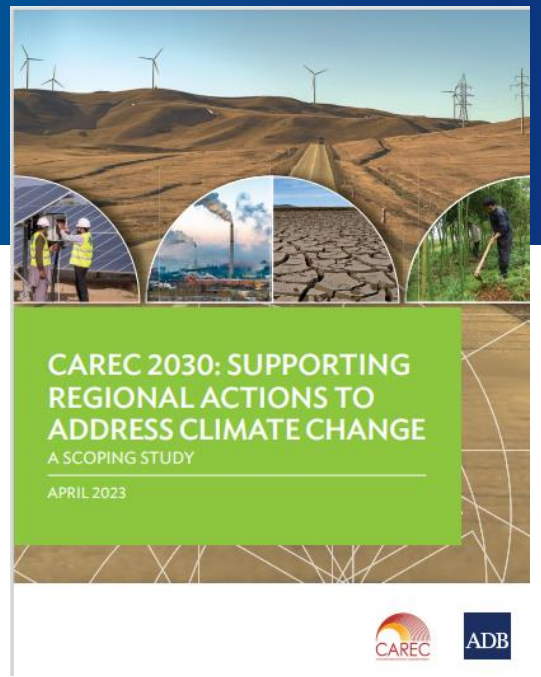
Global Non-CO_2 Emissions by Gas ($MtCO_2e$)



Methane (CH4) is a potent greenhouse gas (GHG) that has extreme effects on climate warming.

Source: Global Non-CO_2 Greenhouse Gas Emission Projections & Mitigation: 2015-2050, USEPA 2019

Central Asia and Climate Change



Central Asia is already feeling the effects of climate change, according to a scoping study produced by the Asian Development Bank in 2023:

Water Scarcity:

- Over the past 50–60 years, the area of glaciers in Central Asia has decreased by 30%
  - Freshwater in Central Asian basins is projected to decrease between 10-40% in next 75 years

Increased intensity and frequency of storms

- Melting snowcaps plus intensifying extreme weather events are triggering natural calamities, including the increasing frequency and severity of floods and landslides

Increased Desertification:

- The shortage of water resources, increase in temperature, high variability of precipitation, extreme heat spells, and deforestation lead to increased desertification.
  - ABD estimates that 4%–10% of cultivated areas, 27%–68% of pastures, and 1%–8% of forests are currently significantly degraded in Central Asia and are subject to desertification.

Other Important Considerations

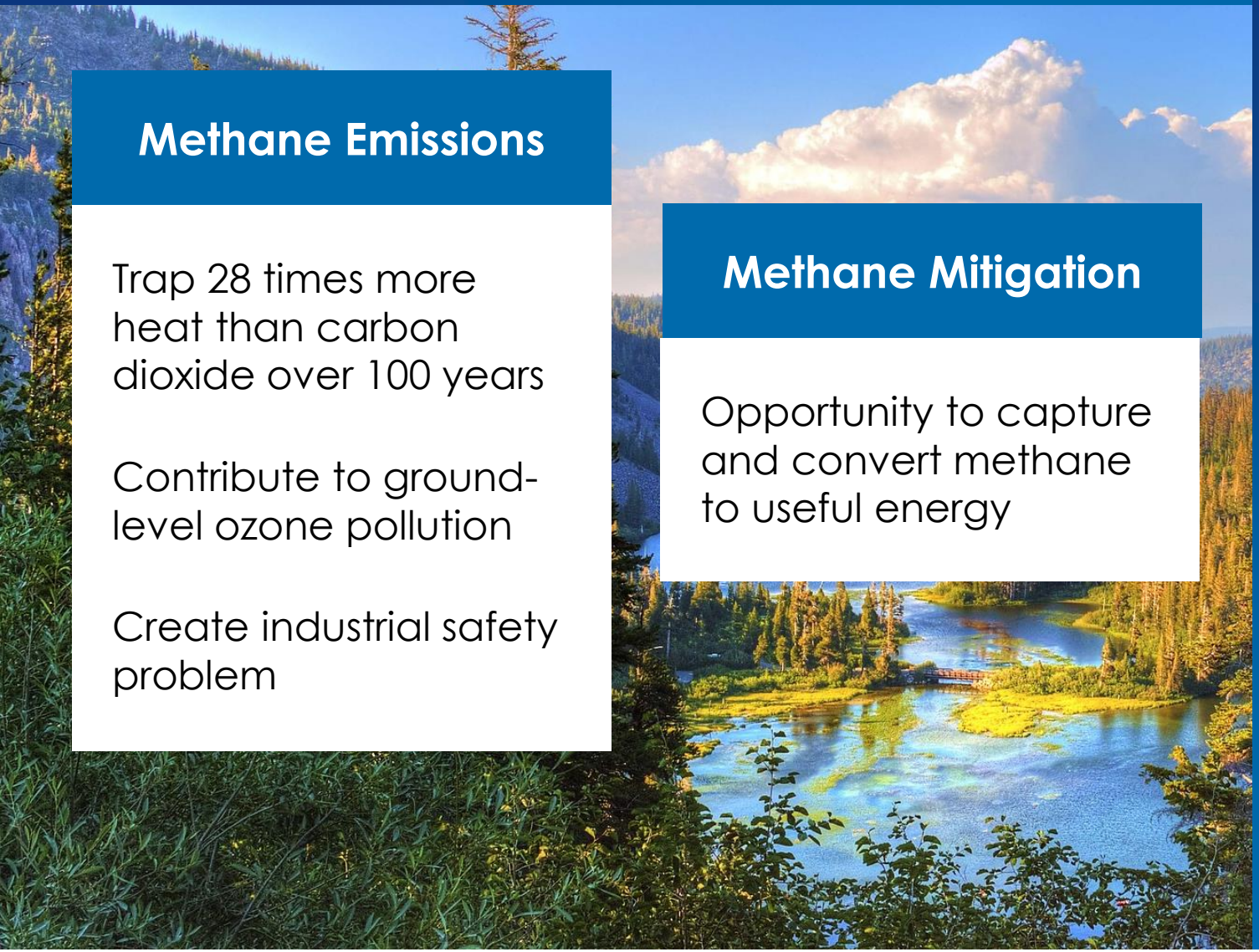
- The population is growing rapidly which will only increase demand for natural resources
- Air pollution is already a challenge for Central Asia with poor air quality in cities, especially in the winter.

Source: CAREC 2030: Supporting Regional Actions to Address Climate Change, ADB, April 2023

Methane and Air Quality

- Methane contributes to the formation of ground-level ozone - smog
- Ozone has been associated with
  - Respiratory illnesses and hospitalizations
  - Cardiovascular disease
  - Asthma and related Emergency room visits
  - Lost work and school days
  - Restrictions on activity
  - Premature death
- Reducing methane can improve air quality and human health

Why Methane Matters



Methane Emissions

Trap 28 times more heat than carbon dioxide over 100 years

Contribute to ground-level ozone pollution

Create industrial safety problem

Methane Mitigation

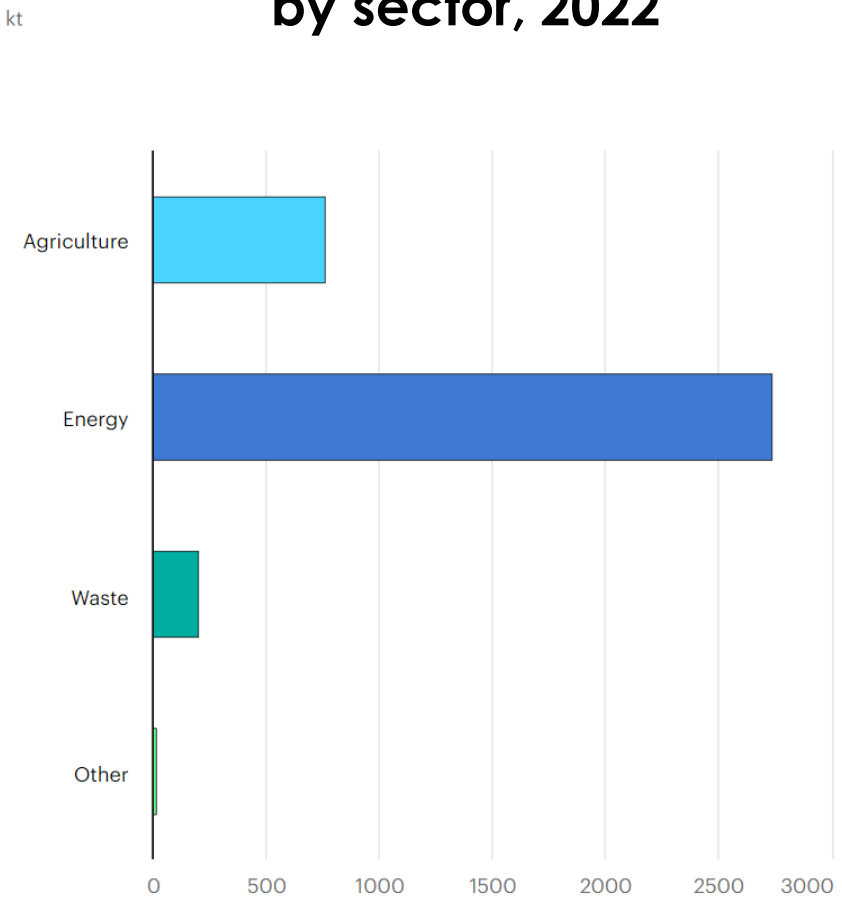
Opportunity to capture and convert methane to useful energy

Positive Outcomes of Capturing and Using Methane

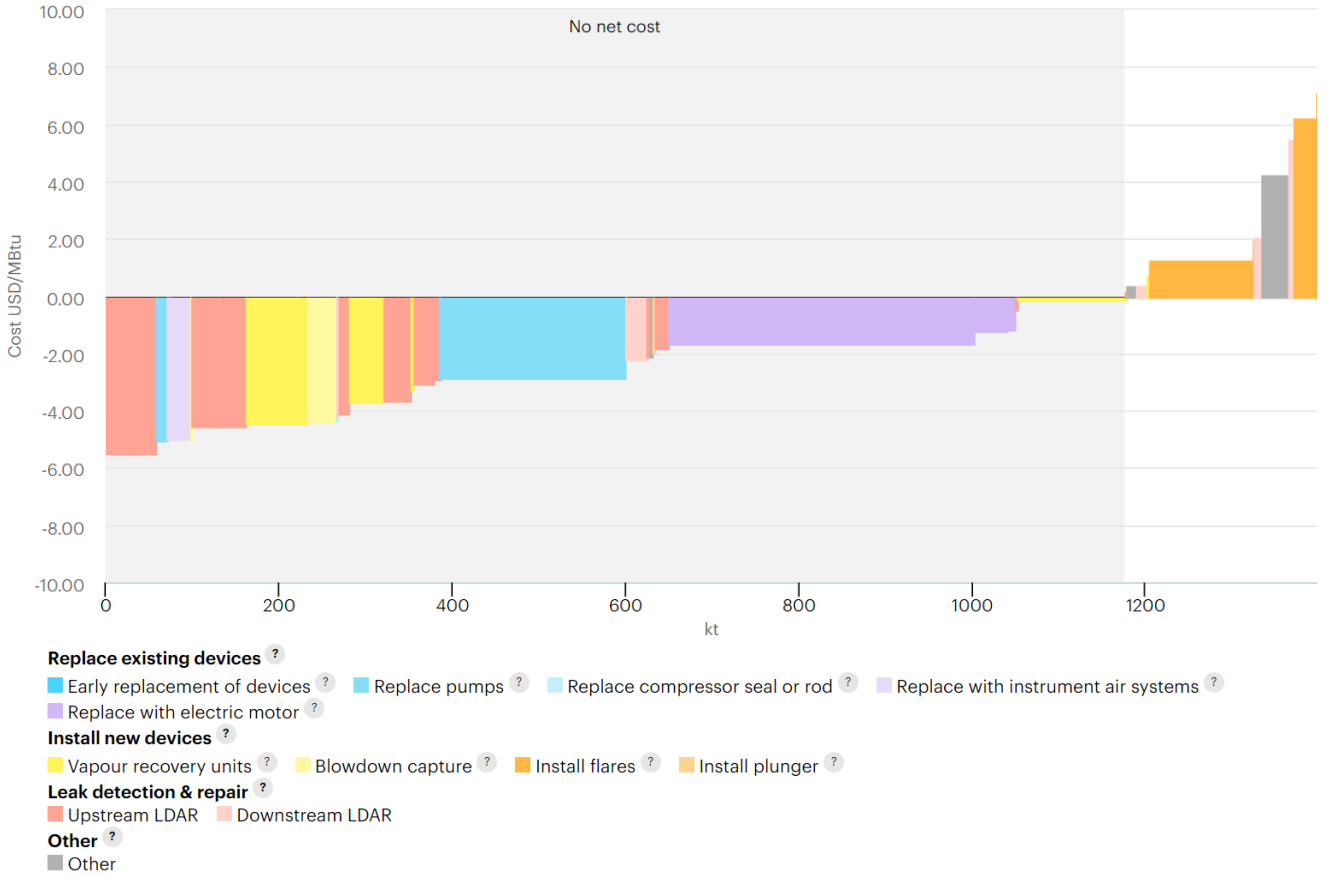
- ✓ Better air and water quality
- ✓ Improved human health
- ✓ Increased worker safety
- ✓ Enhanced energy security
- ✓ Economic growth
- ✓ Reduced odors

Kazakhstan Methane Emissions and Reduction Potential

Methane emissions in Kazakhstan, by sector, 2022



Oil & gas methane abatement potential in Kazakhstan, by measure



Source: International Energy Agency (2023), *Methane Tracker Database,* IEA, Paris.

What's needed? Policies, Measures and Technical Capacity

- There are many policies and measures countries can implement to speed up the adoption of technologies and practices that reduce methane emissions
  - **Regulations/Command and Control:** Minimum standards, technology or practice requirements or prohibitions; "emission per output" requirements
  - **Market-based/Economic:** taxes, fees, carbon pricing, trading systems, incentives, subsidies
  - **Information-based:** measurement and reporting requirements, disclosure requirements
  - **Voluntary programs:** with industry, subnationals

Key considerations:

- Engage key stakeholders
- Establish realistic goals
- Explore your legal and regulatory frameworks (e.g. constraints, authorities)
- Evaluate policies that can support and existing policies that may undermine goals
- Consider finance mechanisms and options early
- Learn from others' experiences; no need to reinvent the wheel
- Build capacity for success

Global Methane Pledge as a Driver

- **What it is:** Voluntary pledge by countries to achieve ambitious global methane reductions:
  - Countries commit to work to achieve a collective goal of reducing global methane emissions by at least 30% from 2020 levels by 2030, AND
  - Move towards using the highest tier good practice inventory methodologies, and to provide greater transparency in key sectors
- Launched by the US and EU at **COP26 in November 2021**
  - Has grown to more than 150 countries that have committed, representing nearly 50% of global anthropogenic methane emissions
- **Who Supports it:**
  - Climate & Clean Air Coalition (CCAC) hosted by United Nations Environment Program (UNEP) serves as "secretariat"
  - CCAC supports implementation along with others, including but not limited to the Global Methane Initiative

https://www.globalmethanepledge.org/

Global Methane Initiative (GMI)

Global Methane Initiative
Leading methane action since 2004

- GMI: an international partnership of 47 countries and hundreds of private sector and multilateral partners
- Unique expertise, tools, and resources that enable countries to reduce methane quickly and cost-effectively across key sectors:

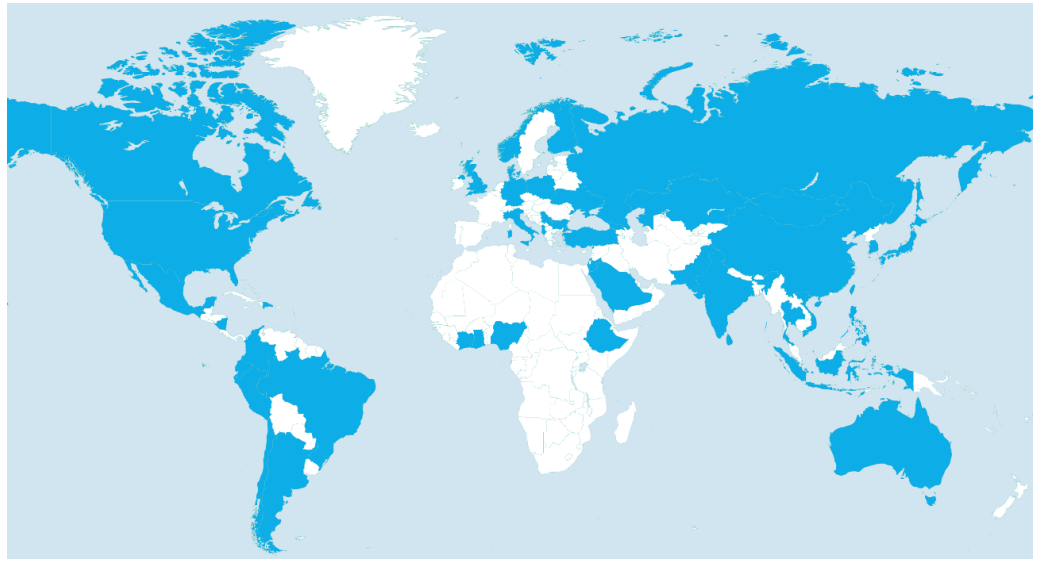
Oil & Gas Systems

Coal Mines

Wastewater

Agriculture: manure

Municipal Solid Waste



GMI Partner Countries

www.globalmethane.org

Strategic Alliances

CLIMATE & CLEAN AIR COALITION
TO REDUCE SHORT-LIVED CLIMATE POLLUTANTS

UNECE

iea

UN environment programme

THE WORLD BANK
IBRD • IDA

GMI Actions and Resources to Support Methane Reductions

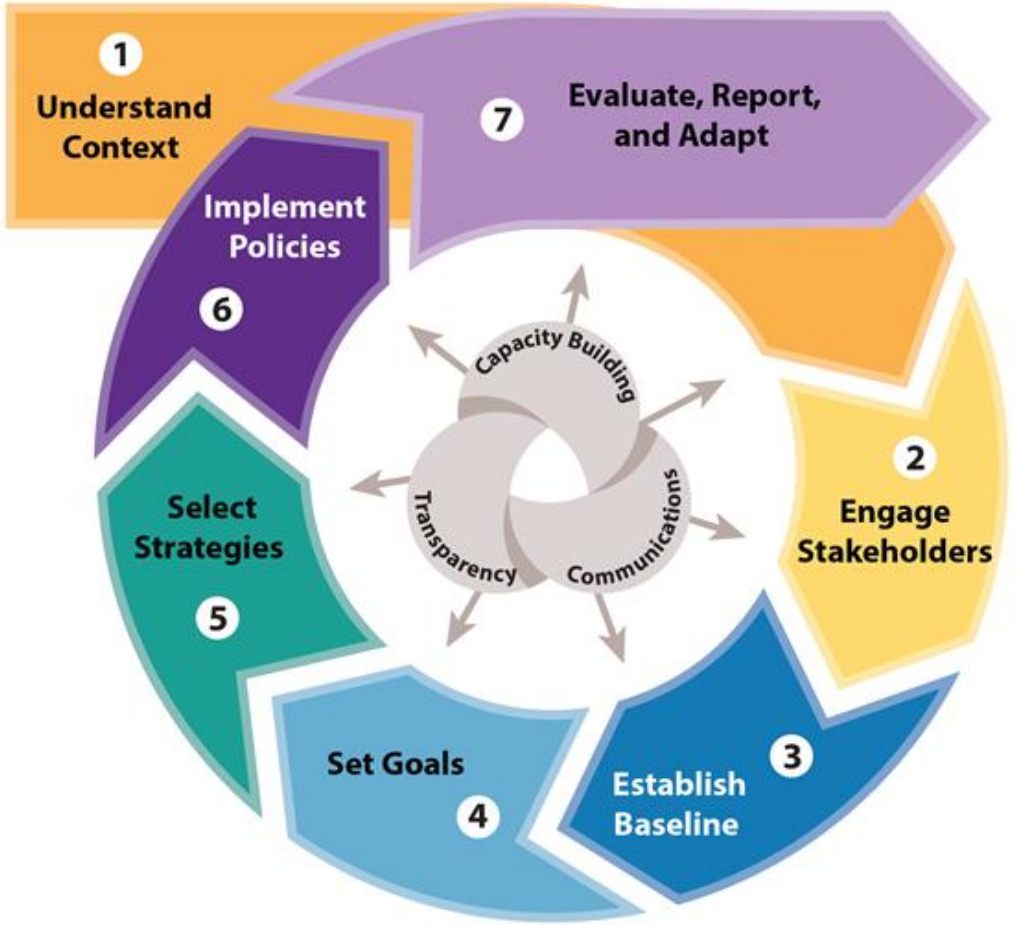
Global Methane Initiative
Leading methane action since 2004

Performs Assessments and Provides Tools	Builds Capacity with Best Practices and Guidance	Fosters peer exchange and information sharing
• Desktop studies • Site Visits and scoping missions • On-site measurement (i.e Pre-Feasibility) studies • Leak Detection and Repair • Data collection assistance • Reports/Technical Presentations/ Guidance • Tools/Models • Databases on projects • Analyses	• Mitigation technologies and best practices • Best practices and technologies for measurement, reporting and verification (MRV) • Guidance to refine emissions inventories • Trainings • Consultations	• Conferences • Presentations to Partners and Other Stakeholders • Subcommittee Meetings • Workshops • Webinars • Other Meetings

For more information: www.globalmethane.org

New! GMI Policymaker's Framework for Addressing Methane Emissions

Global Methane Initiative
Leading methane action since 2004



- **What:** A framework to help countries accelerate progress toward their methane emission reduction goals across all sectors
- **How:**
  - Lays out a step-by-step process for developing and implementing policies, programs, and partnerships to reduce methane emissions
  - Compiles and organizes available tools, resources and case studies – generally and sector-specific - around seven steps
  - Outlines three core principles for success
    - Capacity building, transparency and communications
- **Who:** Primarily for national policymakers
- **When:** Mid-November 2023
- **Where**: www.globalmethane.org

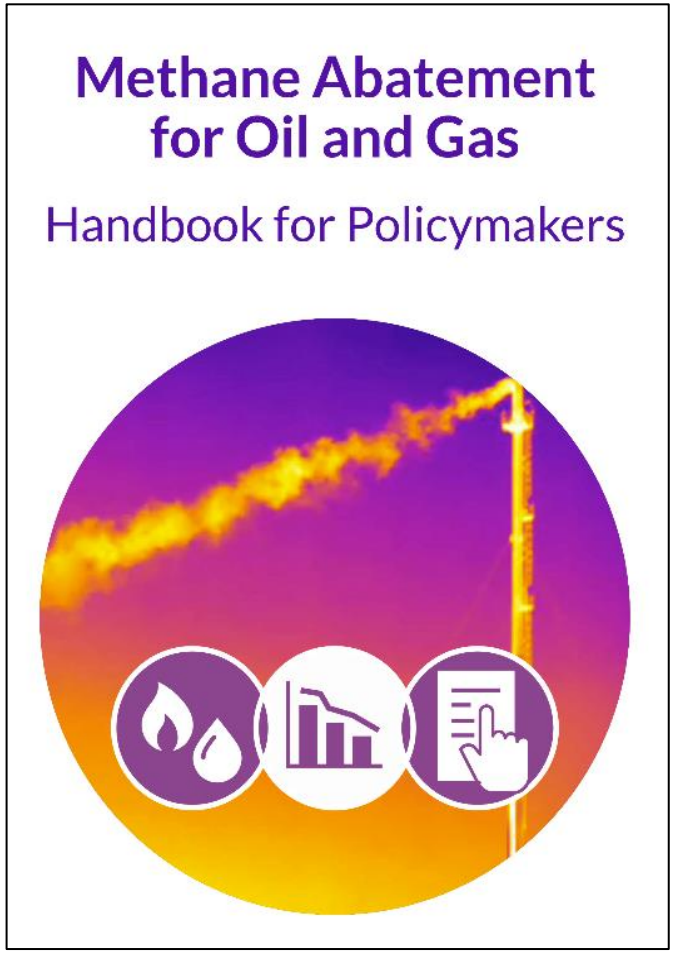
New! Methane Abatement for Oil and Gas: Handbook for Policymakers

- A 'how-to' action guide to policymakers to adopt and enforce legal instruments to rapidly and effectively reduce methane emissions from the Oil and Gas sector.

- Sponsored by **U.S. Department of State, Bureau of Energy Resources.**

- Drafted by 13 expert co-authors from government (U.S., Sri Lanka, and Bangladesh), NGOs, multilateral institutions (IEA, The Commonwealth), industry, and academia

- Available here: https://cldp.doc.gov/methane-abatement-resources



Save the date!
2024 Global Methane Forum: *Mobilizing Methane Action*

Goals:

- Convene global government, science, industry and finance thought leaders to mobilize ambitious action on methane
- Highlight methane mitigation activities underway to achieve the goals, including of the Global Methane Pledge
- Share information about technical, policy, financing, and regulatory challenges and solutions related to methane policy and project development

Dates and Location:

- 18-20 March 2024, UN Palais des Nations, Geneva, Switzerland

Additional information will be posted here:

- https://www.globalmethane.org/2024forum and at https://unece.org/sustainable-energy.

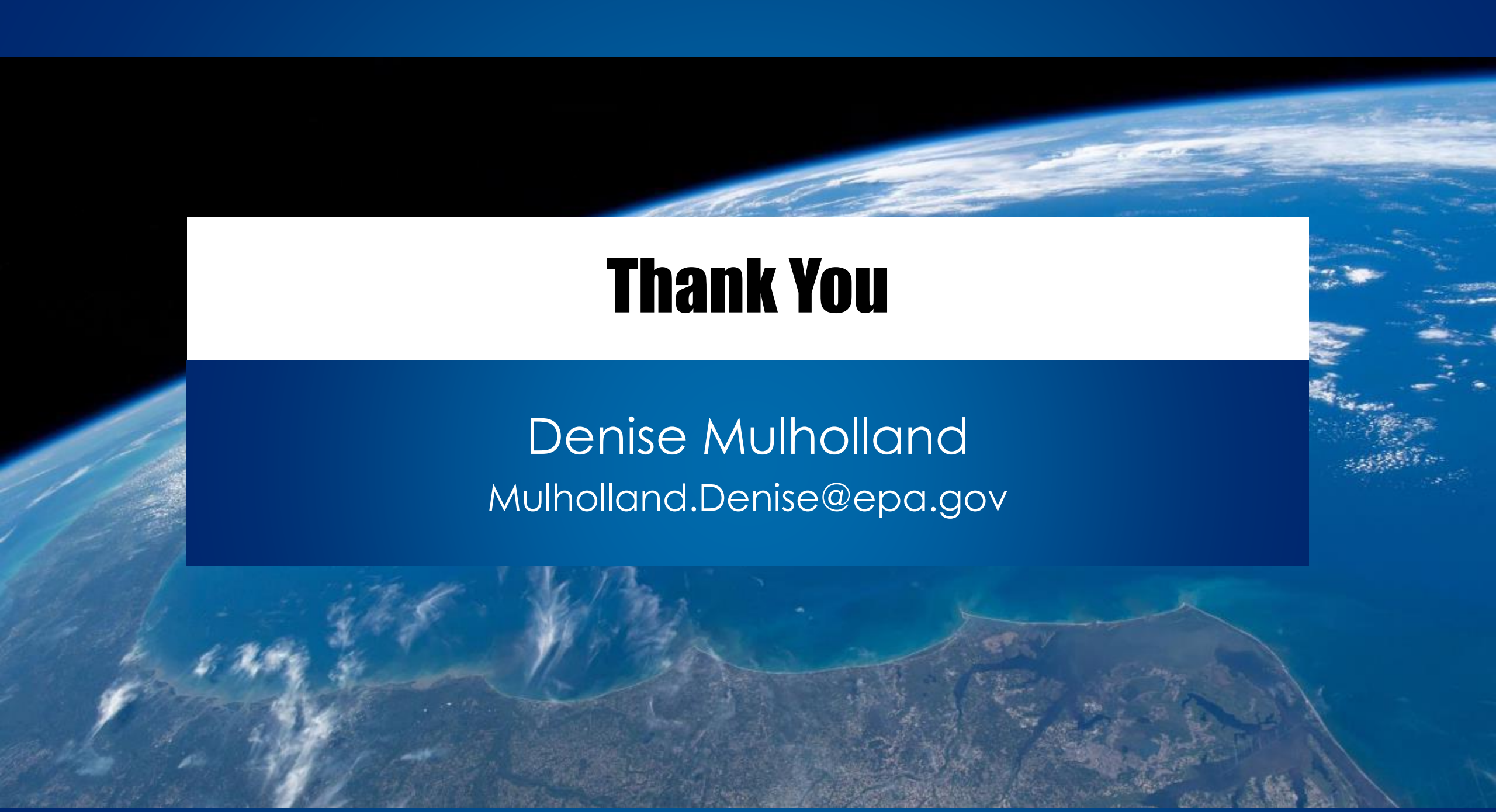
Global Methane Initiative
Leading methane action since 2004

UNECE

Global Methane Hub

CLIMATE & CLEAN AIR COALITION
TO REDUCE SHORT-LIVED CLIMATE POLLUTANTS

We look forward to welcoming you in Geneva!



Thank You

Denise Mulholland
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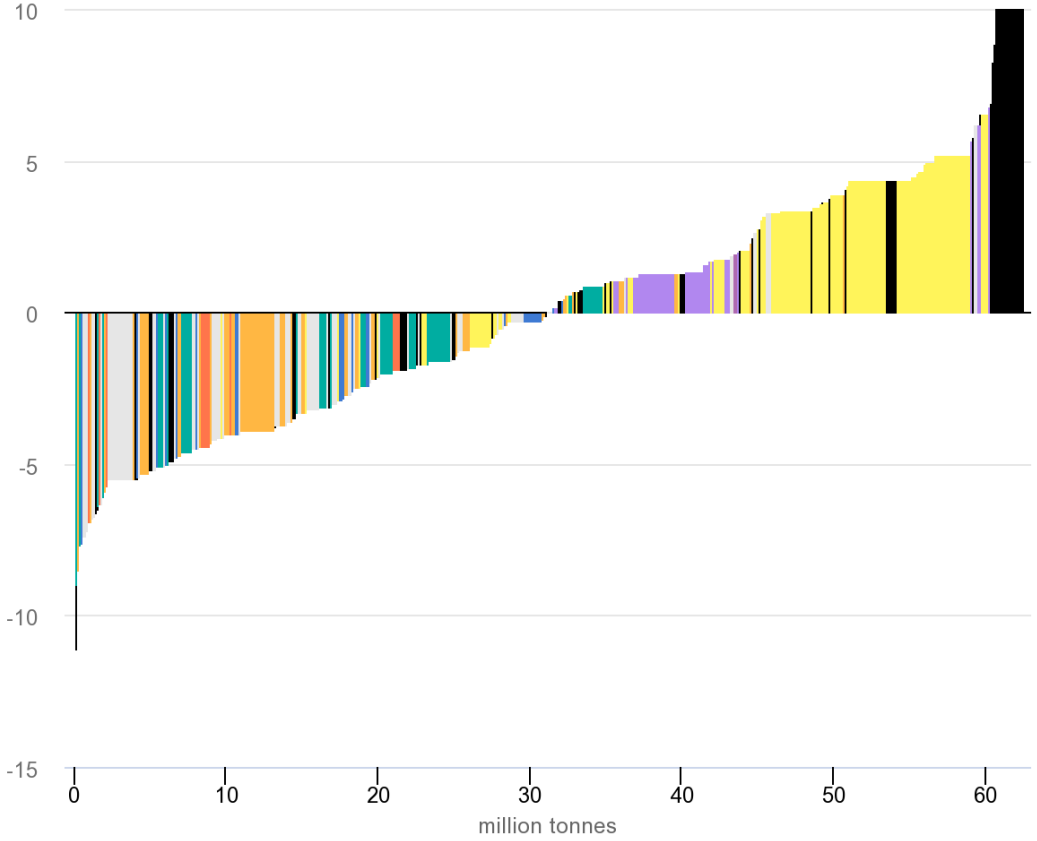
Solutions to Reduce Methane Emissions from Oil & Gas

IEA Marginal abatement cost curve for oil & gas methane emissions by measure

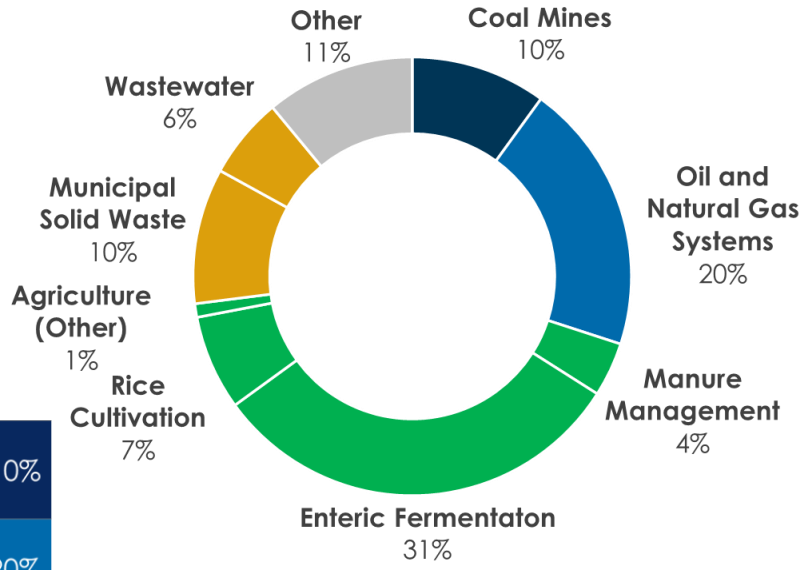


Early replacement of devices
Replace pumps
Replace compressor seal or rod
Replace with instrument air systems
Replace with electric motor
Vapour recovery units
Blowdown capture
Install flares
Install plunger
Upstream LDAR
Downstream LDAR
Other

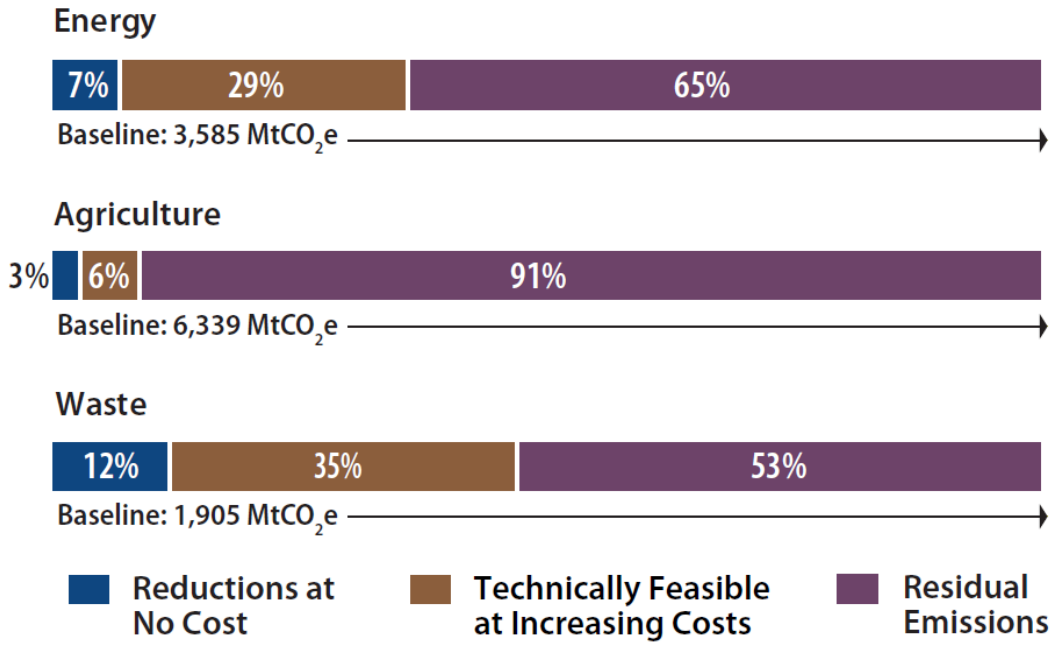
2030 Global Methane Emissions and Reduction Potential

2030 Projected Global Methane Emissions, by Source

Coal Mines	10%
Oil and Natural Gas Systems	20%
Agriculture	43%
Waste	16%
Other	11%



Mitigation Potential by Sector, 2030



Source: Global Non-CO_2 Greenhouse Gas Emission Projections & Mitigation: 2015-2050, USEPA 2019, https://www.epa.gov/global-mitigation-non-co2-greenhouse-gases/global-non-co2-greenhouse-gas-emission-projections