

Methane
Key Messages

UNDERSTANDING THE ROLE OF METHANE IN PUBLIC HEALTH, CLIMATE AND AIR QUALITY

Reducing Methane Emissions

Reducing methane emissions can have significant climate change benefits, especially in the near term. Reductions can help avoid potential climatic tipping points and reduce environmental impacts. It will also reduce the formation of tropospheric ozone, which damages the health of humans and plants.

The Science is Strong

Methane is a powerful greenhouse gas with an atmospheric lifetime of approximately 12 years. Human are responsible for around 60% of all methane emissions. Methane is also an important ingredient in the formation of tropospheric (ground level) ozone, which causes serious health problems and damages plants.

- Agriculture (mainly livestock rearing and rice production), fossil fuel production and distribution, and municipal solid waste and wastewater management accounts for 93% of human caused methane emissions.
- Methane's Global Warming Potential (i.e., the ability of the gas to trap heat in the atmosphere) is 25 times that of carbon dioxide (CO_2), resulting in methane's stronger influence on warming during its 12-year atmospheric life time.
- Since 1750 methane concentrations in the atmosphere has grown from approximately 722 part per billion to 1803 part per billion. Much of it from human activities.
- Methane contributes to background tropospheric ozone levels both as an ozone precursor temperatures.
- Tropospheric ozone reduces the health of plants by reducing their ability to photosynthesize and absorb carbon. This impacts crop productivity.
- When inhaled tropospheric ozone can permanently damage lung tissue. It worsens diseases like bronchitis, emphysema, and triggers asthma.

The Urgency is Now

Tropospheric Ozone exposure is responsible for an estimated **150,000 premature deaths annually**. Children, older people, and people with existing heart and lung disease are particularly vulnerable. Reducing methane emissions can prevent almost **52 million tonnes** of annual crop losses.

Key messages to encourage action now:

- **It's Time to Act!** To slow the rate of near term climate change. It's not enough to act, we must act now.
- **Don't Wait!** Act now to reduce methane produce health and climate results now.
- **You Benefit!** Local reductions mean local health, food security and energy benefits.
- **Solutions are Here!** Technologies and practices already exist and have been implemented around the world.

Multiple Benefits

Beyond its benefits to climate, reducing methane emissions can deliver energy, safety, and local air and water quality benefits. These added benefits makes reduction projects very attractive.

- Reducing global methane emissions can lower tropospheric ozone formation and reduce associated mortalities, particularly in equatorial regions.
- Many of the technologies and practices that reduce methane emissions also reduce associated emissions of volatile organic compounds (VOCs), odors, and other local air pollutants.
- Run off from landfills and manure, and waste from agricultural facilities can infiltrate local waters and cause disease, eutrophication, and other environmental problems. Capturing methane from these sources will reduce contamination of local waters, benefitting public health and ecosystems.
- Producing energy from recovered methane can help avoid the use of higher CO_2- and pollutant-intensive energy sources like wood, coal, and oil. It also provides local sources of alternative energy that can spur local economic development.

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

WITH THE COMBINATION OF STRONG SCIENCE, HIGH LEVEL POLITICAL WILL, AND A RANGE OF COST-EFFECTIVE MEASURES, THE CCAC ENCOURAGES FAST ACTION TO ACHIEVE REAL AND MULTIPLE BENEFITS.

The Solutions are Known

Cost effective control technologies and measures are available to reduce emissions from sources of Methane. Peer reviewed scientific assessments point to specific Methane sector and mitigation measures, which if implemented widely and rapidly, can make a big difference for climate, public health, and food security

Key messages about measures to reduce emissions of Methane:

- Supported by Science - The science tells us where to start: reducing emissions from oil and gas operations, agriculture, and municipal solid waste.
- Cost Effective – Accounting for the multiple benefits associated with methane measures makes them cost effective.

Take Action with the CCAC

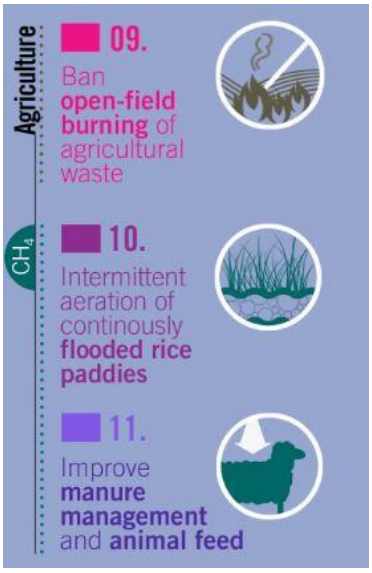
The CCAC is working to ensure rapid delivery of climate and clean air benefits by reducing methane and other key short-lived climate pollutants, including black carbon and hydrofluorocarbons (HFCs). Key messages about how CCAC can help reduce methane:

- Resources are available: The CCAC can work with you to identify the most cost-efficient and practical ways to reduce emissions.
- Be a Partner: The CCAC is a non-binding, voluntary international partnership, bringing together diverse and experienced global partners.
- Make Your Success Happen: The CCAC encourages national action, looks for barriers to action and helps to surmount them; and promotes best practices, showcasing successes.

Methane Measures

Measures to reduce methane have additional benefits to health, the climate and food security. The CCAC works across three sectors – agriculture, oil and gas, and municipal solid waste – to deliver a range of measures.

Agricultural Sources

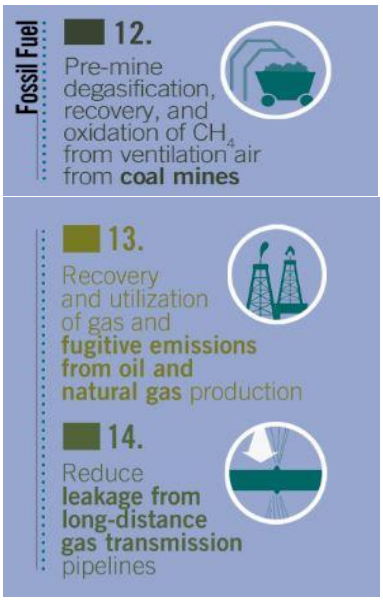


Agriculture is a net emitter of green-house gasses (GHG), including methane and other short-lived climate pollutants (SLCPs).

The CCAC agriculture initiative is reducing methane emissions by improving manure and livestock management in mixed dairy farming systems, beef production, goats and sheep, commercial pig production, and improved mixed dairy systems.

Paddy rice production produces 10% of man-made methane. Emissions are being reduced by promoting alternate wetting and drying (AWD) practices on a large scale. This creates a more stable food supply and reduces water use and production costs.

Oil and Gas Sources



Methane from fossil fuel production accounts for 29% of man-made emissions.

The CCAC Oil and Gas Methane Partnership works with oil and gas to identify and prevent leaks from nine core sources in their operations. Recovering and using this gas is good for business and improves occupational health and safety.

The initiative also has a technology demonstration project that looks to recover gas instead of flaring. This also reduces black carbon emissions from the sector.

http://www.ccacoalition.org/en/initiatives/oil-gas

Waste Sources

Landfills are the third largest source of methane. Burning garbage also emits black carbon and other pollutants. Population growth, urbanisation and changing consumption patterns, means the amount municipal solid waste will nearly double worldwide by 2025, increasing pressure on cities to manage this growing economic, environmental, and social challenge.

The CCAC is reducing municipal solid waste by preventing and/or reducing waste generation, strengthening policy planning and scaling up individual city action to the national level, banning open burning and open dumping, diverting organics from landfills, optimising waste collection routes and transportation of waste, and recovering methane from landfills for energy production before they are emitted.

http://www.ccacoalition.org/en/initiatives/wast