



Questions and Answers

WHAT IS METHANE?

Methane (CH_4) is a hydrocarbon that is a primary component of natural gas. It is also a “greenhouse gas,” or GHG, meaning that its presence in the atmosphere affects the earth’s temperature and climate system. Methane is the second most prevalent human-induced GHG next to carbon dioxide (CO_2).

WHY IS THERE CONCERN ABOUT METHANE EMISSIONS?

Methane is a GHG that is 23 times more potent than carbon dioxide at trapping heat in the atmosphere. Over the last two centuries, methane concentrations in the atmosphere have more than doubled, largely due to human-related activities. Methane now accounts for 16 percent of global GHG emissions from human activities.

WHERE DOES METHANE COME FROM?

Methane is emitted from a variety of both anthropogenic (human-induced) and natural sources. Anthropogenic emission sources include agriculture, coal mines, landfills, and natural gas and oil systems. About 60 percent of global methane emissions come from these sources.

WHO ARE THE BIGGEST METHANE EMITTERS?

Globally, China, Russia, Ukraine, Kazakhstan, India, the United States, and Brazil are estimated to be responsible for almost half of all anthropogenic methane emissions. The major methane emission sources in these countries vary greatly. For example, a key source of methane emissions in China is coal production, whereas Russia emits most of its methane from natural gas and oil systems. Landfills are the largest source of U.S. methane emissions.

WHY CONCENTRATE ON ACTIONS TO CAPTURE AND USE METHANE AS AN ENERGY SOURCE?

Reducing methane emissions has many important energy, safety, economic, and environmental benefits. First, because methane is a potent GHG and has a short atmospheric lifetime, methane reductions can produce significant near-term results. In addition, methane is the primary constituent of natural gas. Therefore, the collection and utilization of methane provides a valuable, clean-burning energy source that improves quality of life in local communities and can generate revenue and improve living standards.



Producing energy from recovered methane can also replace higher emitting energy resources such as wood, coal or oil. This can reduce end user and power plant emissions of carbon dioxide and air pollutants such as sulfur dioxide (a major contributor to acid rain), particulate matter (a respiratory health concern), and trace amounts of hazardous air pollutants.

WHY AREN'T EFFORTS TO CAPTURE AND PROFITABLY USE METHANE EMISSIONS MORE WIDESPREAD?

Even with the multiple benefits of methane recovery, these projects are not widespread for several reasons. First, methane is generally a secondary issue in the industrial processes from which it is emitted. Coal mine operators, for example, generally vent methane from the mine workings because it is explosive, and mining companies have historically not viewed methane as an energy resource in its own right. Second, those responsible for the emissions may not be familiar with the technologies available for methane recovery or the potential for profitable projects. Increased information exchange and technical training often helps generate support for methane recovery projects. Finally, poorly functioning energy markets and financially insolvent utilities and municipalities in many countries fail to provide the private sector with a business environment that is conducive to investment in projects to capture and use methane.

WHAT IS THE OBJECTIVE OF THE METHANE TO MARKETS PARTNERSHIP?

The Methane to Markets Partnership is an action-oriented initiative, the goal of which is to reduce global methane emissions, enhance economic growth, promote energy security, improve the environment, and reduce greenhouse gas emissions. The initiative focuses on cost-effective, near-term methane recovery and use as a clean energy source. The Partnership provides a forum for collaboration between developed countries, developing countries, and countries with economies in transition—together with strong participation

from the private sector. The Methane to Markets Partnership targets four major methane sources for action: animal waste management, coal mines, landfills, and natural gas and oil systems.

WHICH COUNTRIES ARE PARTICIPATING IN THE METHANE TO MARKETS PARTNERSHIP?

To date, 24 Partner countries have joined Methane to Markets. These include: Argentina, Australia, Brazil, Canada, China, Colombia, Ecuador, Germany, India, Italy, Japan, Mexico, Mongolia, Nigeria, Pakistan, Philippines, Poland, the Republic of Korea, Russia, Thailand, Ukraine, the United Kingdom, the United States, and Vietnam. The European Commission also participates as a Partner. It is expected that other countries with an interest in promoting methane capture and use projects will join the Partnership in the future.

WHAT COMMITMENTS DO COUNTRIES MAKE THAT ARE PARTICIPATING IN THIS INITIATIVE?

Participating countries have signed the Terms of Reference document that outlines the purpose, organization, and functions of the Partnership. This document also outlines more specific activities to be undertaken by the Partnership:

- Identify and promote areas of bilateral, multilateral, and private sector collaboration on methane recovery and use initially in the areas of animal waste management, coal mining, landfills, and oil and natural gas systems
- Identify cost-effective opportunities to recover methane emissions for energy production and potential financing mechanisms to encourage investment
- Identify and address barriers to project development and improve the legal, regulatory, financial, institutional, technological, and other conditions necessary to attract investment in methane recovery and utilization projects
- Foster cooperation with the private sector, research organizations, development banks, and other relevant governmental and non-governmental organizations
- Support the identification and deployment of best management practices in the recovery and use of methane
- Improve scientific understanding and certainty in relation to the recovery and use of methane
- Develop collaborative action plans outlining a series of concrete activities and actions that directly support the core goals and functions of the Partnership
- Develop and implement a process for evaluating progress and reporting results

In addition, developed country Partners assist developing countries and countries with economies in transition in expanding methane recovery projects through cooperative technical assistance and technology deployment.

CAN THE PRIVATE SECTOR AND NON-GOVERNMENTAL ORGANIZATIONS PARTICIPATE IN THE METHANE TO MARKETS PARTNERSHIP?

Active involvement by private sector entities, financial institutions, and other non-governmental organizations is considered essential to build capacity, transfer technology, and promote investment that will ensure the Partnership's success. The Project Network is the mechanism to facilitate this involvement, enhance communication, and identify and implement collaborative project development opportunities. Any organization interested in the Partnership can join the Project Network by submitting a completed Project Network Membership Agreement to the Administrative Support Group or signing up online at www.methanetomarkets.org.

WHAT ARE THE EXPECTED BENEFITS OF THE METHANE TO MARKETS PARTNERSHIP?

The Partnership has the potential to deliver, by 2015, annual reductions in methane emissions of more than 180 million metric tons of carbon dioxide equivalent (MMTCO₂E) or recovery of 500 billion cubic feet of natural gas. If achieved, these reductions could lead to stabilized or even declining levels of global atmospheric concentrations of methane. To give a sense of scale, this would be equivalent to:

- Annual emissions from 33 million cars, planting 55 million acres of trees, or eliminating emissions from fifty 500-megawatt coal-fired power plants; or
- Providing enough energy to heat approximately 7.2 million households for one year

For additional information, please visit the Methane to Markets Partnership Web site at www.methanetomarkets.org or contact the Administrative Support Group.

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