

Global Warming Caused Due to Methane

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DESCRIPTION

Greenhouse Gases (GHG) warm the earth by collecting energy and preventing its escape into space; they function as a blanket shielding the planet. GHGs have varying warming effects on the planet. The Global Warming Potential (GWP) was created to make it simpler to compare the global warming effects of various gases. It is a measurement of how much energy 1 tons of gas emissions will absorb compared to 1 tons of CO₂ emissions during a specific time period. A gas's GWP indicates how much it heats the Earth over time. Analysts can combine emissions estimates for several gases for example, to establish a national GHG inventory, and policymakers can use GWPs to assess emission reduction prospects across industries and gases. Methane accounted for around 11% of total greenhouse gas emissions from human activities in the United States in 2020. Human activities that release methane include natural gas infrastructure leaks and cattle husbandry. Natural methane sources, such as wetlands, also produce gas. Natural processes in soil and chemical reactions in the atmosphere also contribute to the removal of CH₄ from the environment. Although methane has a far shorter life-span than carbon dioxide, it is more efficient at trapping radiation. Over 100 years, the comparative impact of CH₄ is 25 times larger than that of CO₂.

Energy, agriculture, industry, land use, and waste management activities all release methane. Cattle, sheep, swine, and goats, for example, produce CH₄ as part of their natural digestion process. CH₄ is also produced when animal manure is stored or handled in lagoons or holding tanks. The emissions are deemed human-related since humans grow these animals for food and other purposes. In the United States, agriculture is the second greatest source of CH₄ emissions. Natural gas and petroleum systems are the second-largest sources of CH₄ emissions in the United States. Methane makes up the majority of natural gas. Natural gas production, processing, storage, transmission, and distribution, as well as crude oil production, refining, transportation, and storage, all leak methane into the atmosphere. Coal mining also contributes to CO₂ emissions.

Methane is created in landfills and throughout the wastewater treatment process as rubbish decomposes. Methane is produced via domestic and industrial wastewater treatment, as well as composting and anaerobic digestion. Natural gas and petroleum systems are the second-largest sources of CH₄ emissions in the United States. Natural gas production, processing, storage, transmission, and distribution, as well as crude oil production, refining, transportation, and storage, all leak methane into the atmosphere. Coal mining also contributes to CO₂ emissions. Methane is created in landfills and throughout the wastewater treatment process as rubbish decomposes. Methane is produced via domestic and industrial wastewater treatment, as well as composting and anaerobic digestion. Methane is also released naturally from a variety of sources. The main source is natural wetlands, which produce CH₄ from microorganisms those breakdown organic compounds in the absence of oxygen. Termites, sediments, volcanoes, seas and wildfires are all smaller sources.

CONCLUSION

Between 1990 and 2020, methane emissions in the United States fell by 17%. Agricultural-related emissions grew over this time period, whereas emissions from other sources, such as landfills and coal mining, as well as natural gas and petroleum systems, dropped. There are several options for lowering CH₄ emissions. The following are some examples. In addition to regulated activities, the EPA offers a number of voluntary programs for lowering CH₄ emissions. Many of the leaks that contribute to CH₄ emissions may be reduced by upgrading the equipment used to produce, store, and transport oil and natural gas. Coal mine methane may also be collected and converted into energy. Manure management strategies can be changed to limit and collect methane produced by manure management procedures. Additionally, changes to animal feeding techniques may lower enteric fermentation emissions. Emission controls that capture landfill CH₄ are an effective reduction technique since landfill gas is a major source of CH₄ emissions in the United States.

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