

Scientists urge crackdown on methane emissions with only 13% regulated

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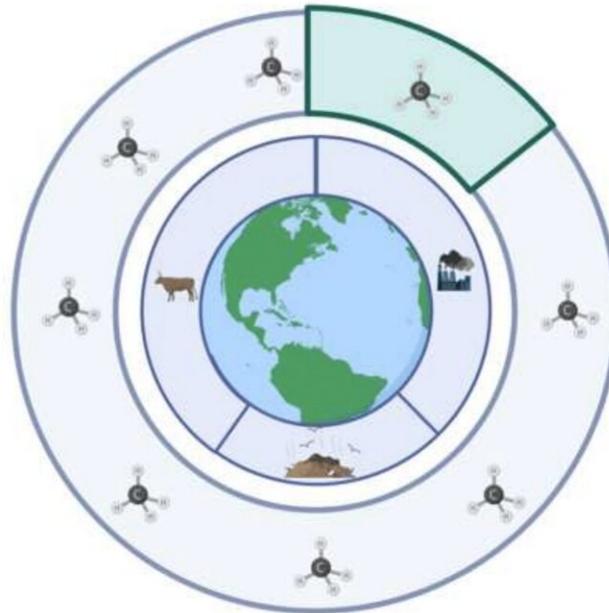
New research from Queen Mary University of London shows that only around 13% of global methane emissions are regulated, despite methane emissions [causing at least 25% of current global warming](#).

The global review, published on May 19 in *One Earth*, also found that little is known about the effectiveness of the policies that exist, with potentially unrepresentative methane emission estimations used rather than actual measurements. Inaccurate estimations can also mean the issue is taken less seriously by decision-makers by masking its severity.

The researchers argue that the lack of regulation and clarity into their impact must urgently be addressed if we are to meet our global climate targets. The review suggests a consistent approach worldwide with robust quantification and reporting could unlock new opportunities to drastically reduce [global warming](#) levels.

To meet the Paris Agreement 1.5°C objective, man-made methane emissions should be reduced by at least 40%–45% by 2030, compared to the 2020 levels. Methane mitigation is not only a cost-effective strategy to reduce global warming but could also improve the air quality. Today methane emissions are increasing faster than at any time since the 1980s.

Mitigation policies cover ~13% of man-made CH₄



Most methane emissions come from the agriculture, energy, and waste sectors, and only about 13% of cumulative methane emissions are covered by policy.
Credit: *One Earth*/Olczak et al.

This global review of methane policies is the first to systematically look at all major man-made emission sources, agriculture, energy and waste. Researchers focused on 281 policies worldwide, 255 of them currently in force, that aim to monitor and reduce methane emissions examining the geographical coverage, strength and effectiveness of the policies.

Of identified national policies, 90% have been adopted in three regions:

North America (39%), Europe (30%) and Asia Pacific (21%). Globally, the research shows there has been a gradual increase in methane policies since 1974. But fossil methane policies, e.g., targeting emissions from coal, oil and gas sectors tend to be less stringent than those targeting biogenic methane sources, especially in the waste sector.

In jurisdictions with fossil methane policies in place, further mitigation opportunities include emissions further along the supply chain, e.g., emissions from Liquefied Natural Gas (LNG) carrier ships, which were investigated by a team of QMUL researchers led by Dr. Balcombe.

One of the main challenges to measuring methane emissions is accurately identifying and quantifying sources. Developing and using technologies such as satellites to monitor methane emissions can help policymakers with measurement, verification, compliance and detection of super-emitters. Introducing policies with greater [policy](#) coverage, mitigation solutions including for major sources, and measurable objectives could lead to a significant methane emissions reduction.

Maria Olczak, lead researcher on this project from Queen Mary University of London, said, "Methane reduction is still perceived as a choice rather than a necessary step alongside CO₂ reduction to combat global warming. And with so many different sources, there needs to be stronger social support and the political will to act.

"Our review highlights the value of setting policies that are predictable and clear for the industry. They will aid effective investment decisions aligned with the long-term climate mitigation goals, including the decrease in emission intensity and in production across developed and developing economies."

Dr. Paul Balcombe, study author and Senior Lecturer in Chemical Engineering at Queen Mary, said, "It's shocking to see that most methane

emissions aren't regulated when they contribute heavily to global warming today, although accurately monitoring emissions is not easy. Our chances of reaching global climate targets are slim if this goes unchecked.

"The good news is that there's an enormous opportunity to limit warming in the short term if we act fast to get on top of methane emissions. We urgently need tighter regulation on better monitoring of methane and concrete actions towards reduction measures."

Andris Piebalgs, study author, part-time Professor at the Florence School of Regulation and a former EU Commissioner for Energy, said, "Over the last few years, we have seen growing attention to methane thanks to multilateral initiatives such as the International Methane Emissions Observatory and the Global Methane Pledge. The European Union and the U.S. EPA are now working to finalize ambitious regulations targeting [methane emissions](#) in the energy sector. I hope that the upcoming COP28 and the first Global Stocktake will make the policymakers across the world realize that [methane](#) mitigation is an effective way to enhance their climate commitments."

More information: A global review of methane policies reveals only 13% of emissions are covered with unclear effectiveness, *One Earth* (2023). [DOI: 10.1016/j.oneear.2023.04.009](https://doi.org/10.1016/j.oneear.2023.04.009)

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