



## Scientists Find Methane is Actually Offsetting 30% of its Own Heating Effect on Planet

### Description

Although methane is harmful in its effect on our climate, a new study of the greenhouse gas shows that its effects are not as intense as previously thought.

The biggest sources of methane gas emissions come from coal, oil, and gas development, although emissions from agriculture is probably the most heavily publicized.

As the planet absorbs heat from the sun, it would naturally radiate this long-wave energy back out into space. But greenhouse gasses trap the heat inside the atmosphere, causing 'the greenhouse effect'.

Scientists at the University of California-Riverside have now found that methane also absorbs short-wave energy, which, through the creation of cooling clouds, actually cancels 30% of its own heat (the heat which the gas has created in the greenhouse effect).

Specifically, it creates more low-level clouds that offset the short-wave energy from the sun and fewer high-level clouds which increase the outward radiation of long-wave energy from the Earth.

"This has implications for understanding in more detail how methane and perhaps other greenhouses gases can impact the climate system," said Robert Allen, UCR assistant professor of Earth sciences. "Shortwave absorption softens the overall warming and rain-increasing effects but does not eradicate them at all."

They also found, as Allen says, that methane cancels 60% of increased levels of precipitation predicted under global warming models—yet more good news for cities and towns around flood zones.

For a number of reasons, this could be a revolutionary discovery. The EPA says that methane's greenhouse effect is 34 times that of CO<sub>2</sub>.

Using the U.S. as an example, methane accounts for only around 10% of the nation's emissions. The lifespan of a methane molecule in terms of its harmful affect on climate is around 9 years.

This means that methane emitted 9 years ago is no longer causing a greenhouse effect. By contrast, the greenhouse effect of CO2 molecules is more than 1,000 years.

For years, climate scientists have known that methane was a critical greenhouse gas for humanity to target, but now we can create more accurate models that reflect how methane is 30% less harmful than we thought and it counteracts 60% of its *own* harmful rain effects.

In a paper published in 2021, Inter-governmental Panel on Climate Change (IPCC) member, and Oxford professor of geosystem science, Myles Allen, showed that over-accounting for methane's effect, particularly from animal agriculture, risked "the reputation of environmental policy, and... undermining public confidence."

It's true, that recent climate models don't account for these newly-discovered effects, but, with the new research from UC Riverside, climate forecasts will become that much more accurate in assessing CO2 vs methane emissions, so we can make good decisions about how to focus our resources in the future.

by Andy Corbley

### Category

1. ECO-Climate-Environment
2. Main

### Date Created

04/23/2023