

Global methane 'flattening' still a mystery

Two papers published recently in the journal *Nature* have reached different conclusions about why concentrations of methane, a highly potent greenhouse gas, began levelling off late last century.



Credit: Wikimedia Commons, Takeaway

Both papers note that methane levels began tapering off in the 1980s, after decades of rising levels due to rapid developments in global industry and agriculture.

Methane is the second most significant gas after carbon dioxide in contributing to global warming. Atmospheric methane concentrations were stable before industrialisation in the 1800s. Since then, they have increased by more than 150 per cent.

One of the *Nature* papers suggests reduced use of petroleum and increased capture and commercial use of natural gas were driving factors behind the 'flattening'.

The other paper found water efficiency and heavier commercial fertiliser use in the booming Asian farming sector – based largely on rice paddies – provided less fertile ground for soil microbes that create methane, while also increasing nitrous oxide, another greenhouse gas.

In a separate commentary on both papers, Martin Heimann, Director of Germany's Max Planck Institute for Biogeochemistry, and a lead author on the Nobel Prize-winning Intergovernmental Panel on Climate Change reports, said he thought 'both analyses are scientifically sound and in themselves consistent'.

Dr Paul Fraser from CSIRO's Marine and Atmospheric Research unit, commented in a subsequent ABC Radio interview that 'what we don't know is what is the mix of those sources and what is the mix of those sinks that set up

this quasi-equilibrium’.

‘Methane emissions reached a maximum probably in the 1960s and 70s when there was a huge activity in the search for oil. Essentially natural gas was getting in the way and was being discarded in the desperate sort of search for oil.

‘Nowadays of course methane is recognised itself as a very valuable fossil fuel and in some respects more valuable than oil. So these days there's no wasting of methane like there used to be in the early days.

‘The data [used in these two papers] have a very large uncertainty on them. [However, they] do point the way for research to better reduce the uncertainties in this very complex field.’

Further discussion of methane’s role as a greenhouse gas can be found at the CSIRO [Cape Grim Greenhouse Gas Data page](#)

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