Briefing

Why methane and how it's measured matters

September 2025

Summary

Methane is a potent greenhouse gas, 80 times more powerful than CO_2 over a 20 year period. Urgent action to cut methane emissions is needed as an emergency brake on global warming. However, there are some voices and organisations using inaccurate or misleading claims about methane emissions, or the way they are measured, to spread confusion or delay action.

This briefing outlines some of these false narratives and explains exactly why they are misleading.

Misleading claims explained

"The UK has played its part and now has low methane emissions"

False

Some organisations and government officials claim the UK doesn't need to take ambitious action on methane because it's already a world leader with relatively low emissions, especially from fossil fuel extraction.

These claims are based on shaky foundations. Official statistics for methane emissions from oil and gas platforms in the North Sea are primarily self-reported numbers from fossil fuel companies, or projections based on models. Whenever detailed studies are conducted, using direct and independent emissions measurement, they always find more methane than expected.[1] In some cases, the true volume of methane emissions could be 70 times higher than is reported in government statistics.[2]

It's true the UK has been a leader in cutting methane emissions from the waste sector. This has been achieved by taxing waste entering landfills to divert some biodegradable waste to other destinations, and by incentivising the capture of any methane generated. However, the renewable obligation scheme which subsidises landfill gas capture will be phased out from 2027.

This is likely to result in an increase in landfill methane emissions, as it's much less viable for operators to capture methane without the subsidy.[3]

When it comes to agriculture, UK's methane emissions have plateaued since 2009.[4] Agriculture is responsible for 55% of the UK's methane emissions.[5]

The UK contributes around 0.6 per cent of global methane emissions. The UK's population is 0.8 per cent of global population. Therefore, the UK is decidedly average in per capita methane emissions. As a champion of the Global Methane Pledge and current co-chair of the Climate and Clean Air Coalition along with Brazil, the UK has a responsibility to lead on methane mitigation.

"There's nothing distinct about methane. It should be treated in the same way as carbon dioxide"

False

Government officials are wary of treating methane differently to other greenhouse gases. At present, methane is bundled together with all greenhouse gases into a 'CO_2-equivalent' category, allowing emissions to be compared directly. Whilst this can be helpful, there are strong reasons for treating methane differently.

Because of its potency and short-lived nature, reducing methane is the world's best 'emergency brake' on global warming. Cutting methane this decade will help stabilise rising temperatures and avoid the world hitting dangerous climate tipping points. But this emergency brake will only work if it's deployed immediately. Action is needed by 2030 or the opportunity to slow the rise in global temperatures will be missed.

By lumping methane together with CO_2 and other greenhouse gases in the carbon budget process that runs to 2050, the government risks undervaluing the importance of urgent action on methane and missing out on the major opportunity to make rapid progress. That's exactly why the Global Methane Pledge was created and why it is so important.

"Tackling methane means telling people what to eat"

False

Successive governments, politicians and officials have repeatedly steered clear of anything that could be considered as interfering with people's personal dietary choices. By extension, some use this as an excuse not to engage in any methane mitigation policy related to consumption of meat and dairy.

But discussions about diet needn't be controversial, as consumption of meat products already fell by 13 per cent in the UK between 2019 and 2023.[6] This is a significant drop in line with the recommendations from the UK Climate Change Committee to reduce meat consumption by 20 per cent by 2035.[7] It

also brings us closer to the Eatwell guidelines, which in 2020, only 0.1 per cent of the British population followed.[8]

Consumer choice is skewed towards meat and dairy consumption by marketing, availability, subsidies and pricing strategies – together often referred to as "food environments.". Meat and dairy campaigns, such as 'Let's Eat Balanced', are showcasing a narrative that people aren't consuming enough meat and dairy in the UK. In reality, thousands of deaths in the UK are associated with excessive consumption of animal products.[9]

A shift to more plant rich diets is good for health, the environment and the economy, and supportive policies can focus on offering more choice.[10] In fact, opinion polls have shown that many people in Britain are interested in shifting to healthier diets and are consciously reducing their meat and dairy consumption.[11] It's important that this desire is supported and encouraged by enabling people to make healthier choices.

"Biogenic methane emissions are part of a natural cycle"

False

Methane is a significant driver of global heating, contributing 0.5°C of warming compared with 0.8°C caused by CO_2.[12] Some claim that 'biogenic' methane, such as that released from livestock, is not a problem as it's part of a natural biogenic cycle. This argument suggests that, since biogenic methane is made of carbon absorbed by the grass that cows eat, when it breaks back down into CO_2 it is absorbed by the plants which other cows then eat. Thus, there is no global warming impact. By this logic, there's no need to reduce methane emissions from agriculture.

This is incorrect as methane is heating the planet much faster than CO_2 while in the atmosphere. The argument ignores the fact that these methane emissions are keeping global temperatures higher than they would have been. According to the World Meteorological Organization, the concentration of methane emissions was 265 per cent above pre-industrial levels in 2024.[13] It's simply wrong to say that methane from cows doesn't matter. Planetary heating would be slowed down considerably if those emissions were reduced.

"The new metric 'GWP*' is a better way to compare methane and carbon emissions nationally"

False

Some industry groups, especially in the agriculture sector, have been lobbying for a new way of comparing methane with CO_2: GWP* (Global Warming Potential*) or 'GWP-star'. This is a complex model used to assess the warming contribution of methane by focusing on the rate of emissions over time. It aims to overcome some of the limitations of the standard global warming potentials GWP20 (over 20 years) or GWP100 (over 100 years), used

by the United Nations Framework Convention on Climate Change (UNFCCC) to model the warming impact of a single pulse of emissions. GWP100 can sometimes underestimate the impact of short term cuts to short-lived greenhouse gases like methane.

Some governments with high methane emissions, like New Zealand and Ireland, have toyed with the idea of using GWP*, thinking that it could make their net zero journey easier to navigate.[14]

However, by looking only at the change of emissions compared to a chosen baseline, previous emissions are excluded from the calculations, effectively disregarding the previous years of pollution before the baseline year. This can enable high polluting countries to claim 'no additional warming', and claim potentially significant greenhouse gas savings with only small real world reductions in emissions. This ignores the continued impact of recent and historical emissions on global heating and could result in setting targets that are not aligned with legally binding Paris Agreement commitments.

If applied at a company or country level, the largest emitters would benefit the most from using GWP*, able to claim 'cooling' effects from only marginal reductions in their methane emissions, while lower emitting countries or companies could be penalised for small increases, even though their absolute warming impact would be significantly less.

While GWP* may bring useful nuance for climate scientists exploring the warming impacts of methane at a global level, it is not a useful metric at a country or company level, due to its sensitivity to the choice of baseline.[15]

Arguments around metrics risk distracting from the pressing need to cut methane emissions as quickly as possible, across all sectors. Whether the methane comes from dairy herds, poorly managed landfills or oil wells, emissions need to be cut quickly. The best way to manage this is to set methane specific reduction targets across the energy, waste and agriculture sectors, such that there is no need to use an emissions accounting metric.

Recommendations

- The government's promised methane action plan should include ambitious plans to cut methane by more than 30 per cent by 2030 from 2020 levels.[16] This should be shared at COP30 to encourage other countries to join the Global Methane Pledge and publicly raise their ambitions.
- A cross government team should be tasked with urgently cutting UK methane emissions according to the plan, so that the UK leads by example globally.
- The methane action plan should set specific methane reduction targets across all sectors, separate from the carbon budgets, to avoid losing time fighting over which metrics to use in emissions accounting.

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Endnotes

[1] See: S Riddick and D Mauzerall, 2023, 'Likely substantial underestimation of reported methane emissions from United Kingdom upstream oil and gas activities', *Energy Environmental Sciences*, vol 16, page 295; S Riddick et al, 2019, 'Methane emissions from oil and gas platforms in the North Sea', *Atmospheric Chemistry & Physics*, vol 19, page 9787; M Puhl et al, 2024, 'Aircraft-based mass balance estimate of methane emissions from offshore gas facilities in the southern North Sea', *Atmospheric Chemistry & Physics*, vol 24, page 1005
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[11] Climate Barometer, 19 March 2025, 'What's the public appetite for climate-friendly food choices?'
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[14] R Sherrington, 6 December 2024, 'Industry-backed emissions metric could 'completely derail' climate action, campaigners warn', *DeSmog*
[15] M Meinshausen and Z Nicholls, March 2022, 'GWP*is a model, not a metric', *Environmental Research Letters* 17, vol 4, 041002
[16] Our recommendations for what should be included in the methane action plan are explored in: R Allen, M Dunn and L Hardy, May 2025, *The climate emergency brake: an ambitious plan to cut UK methane emissions*, Green Alliance