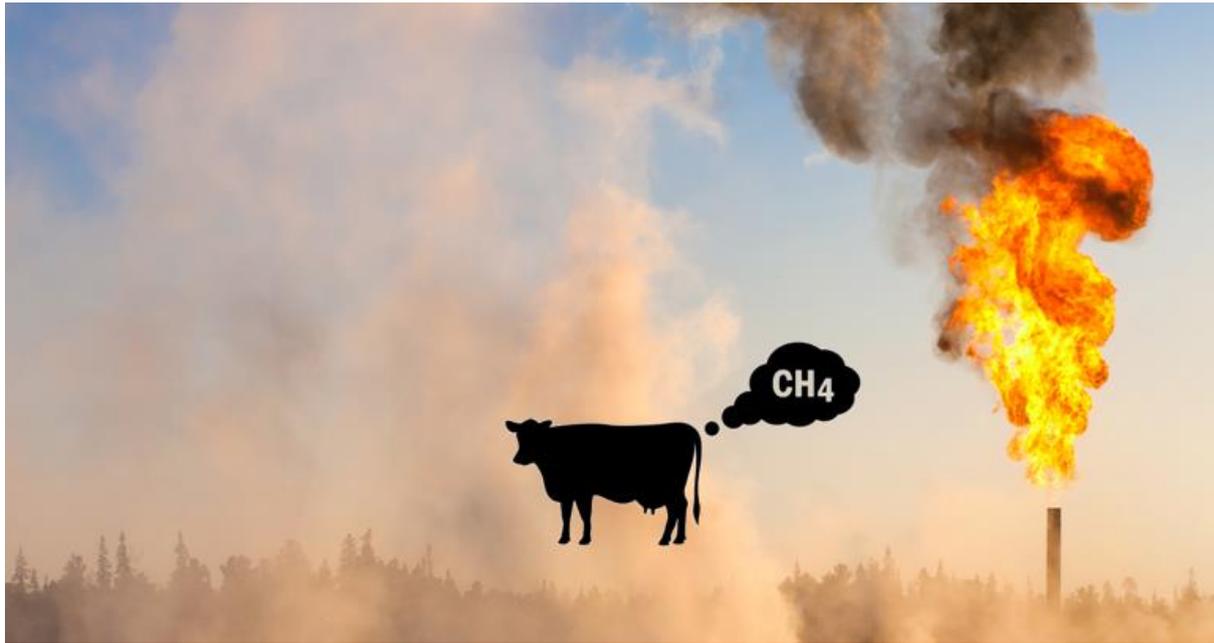

Flaring makes *The Economist's* article “the other greenhouse gas” even more important



A thought piece by  **capterio**

John-Henry Charles and Mark Davis

6th April, 2021

650 words, reading time 3 minutes.

[The Economist has an excellent article](#) on “the other greenhouse gas”, being methane (CH₄) this week. As it rightly says, whilst there is a lot of focus on carbon dioxide, we must not underestimate the importance of addressing methane.

According to The Economist, oil and gas production creates 22% of man-made methane emissions (which was some 80 million tonnes of CH₄ in 2019 – according to the [IEA’s Methane Tracker](#)) – but “ruminants and manure” – aka cows – are almost 40% higher. But these figures underestimate a key source of emissions – the “methane slip” associated with gas flaring – and yet there is a quick fix that can reduce these methane emissions by 80%.

As recent research in the US highlights, when it is directly measured, methane from oil and gas is often found to be underestimated. In particular, the emissions from flaring are almost certainly underestimated due to a lesser-known issue of “methane slip”, which results in methane being directly emitted at gas flares due to inefficient or incomplete combustion.

Whilst we know, from satellite-based measurements of the thermal anomalies associated with gas flaring, that 150 BCM of gas was burned in gas flares in 2019, emissions from methane are less easy to quantify. Yet, a “best practice” gas flare combusts around 98% of the gas it receives (generating 2% “methane slip”). And our discussions with oil and gas producers strongly suggest that methane slip is much higher.

Whilst there is a lack of clear data, we think it is not unreasonable for the global weighted average combustion efficiency to be more like 90% – although that may well be optimistic. This means that emissions from flaring are closer to 1 billion tonnes per year (rather than less than 200 million tonnes embedded in the IEA’s core assumption of 2% methane slip). Including a more realistic methane slip estimate means that emissions from oil and gas (when venting and leaking are included) from methane are in fact underestimated by 13%.

Of course, we strongly advocate that we find solutions that monetise gas (by capturing the flared gas, reducing the methane slip and putting it to productive use). The Economist points out, many of the emissions can be solved at no net cost. In particular, by addressing flaring (which is a highly concentrated source of emissions, in so-called “flare capture projects”) the industry can [make sound ESG investments](#), which create value, reduce emissions and accelerate the energy transition. There are many technically-proven gas flaring solutions and capturing this waste gas should be our first priority and this work is the core of Capterio’s business. The Oil and Gas Methane Partnership (OGMP) and the World Bank’s GGFR programme is providing some excellent oversight, the upcoming MethaneSat from EDF will also help drive change.

However, if all oil and gas producers did what was to move from the current situation of inefficient flare combustion to best-practice flare combustion efficiencies, the industry could reduce methane emissions from flaring by 80% and reduce the total CO₂-equivalent emissions from flaring by 60%. Simple techniques such as changing the flare tip design or actively improving combustion by injecting air can improve combustion efficiency. The chart below has the numbers. (Not shown in the table this, in turn, would reduce total emissions of methane, and CO₂ from wasted gas, from oil and gas by 11%.)

FLARING	IEA assumption	Capterio estimate	Best practice	Difference
Volume of gas (BCM)				
Combusted gas	150	150	163	9%
Methane slip	3	17	3	-80%
Total	153	167	167	0%
CO₂-equivalent emissions (million tonnes, 20-year GWP)				
Combusted gas	281	281	305	9%
Methane slip	175	952	190	-80%
Total	455	1233	496	-60%

Figure: Estimates of the volume and CO₂-equivalent emissions from gas flaring and its associated “methane slip”. The figures embedded into the IEA’s methane tracker probably underestimate emissions of methane. By improving combustion efficiency alone, the industry could reduce emissions by 80%.

Note, we use a 20-year Global Warming Potential (GWP) for methane of 84x, as provided by the IPCC. For a more detailed explanation of these figures, please see our article [“flaring’s billion tonne secret”](#).

Thanks to CCAC, the IEA, the World Bank and other colleagues for inspiration behind some of this thinking. Any errors or omissions are, however, our own.

About Capterio: Capterio is an agile and specialist project developer focused on monetising waste gas in oil & gas energy systems. We bring together assets with technologies, know-how and financing to deliver on-the-ground, real-world, safe and reliable solutions. We support our work with our unique Global Flaring Intelligence Tool (GFIT), which provides real-time insights into flaring for every asset, operator and non-operated partner worldwide.