
Why gas flaring should be in the spotlight at COP26



A thought piece by  **capterio**

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Executive summary

- **Gas flaring creates more emissions than the airline industry, yet much of it can be solved technically and commercially. So-called “flare capture” projects are, therefore, “low-hanging fruit” that reduce emissions, create value and accelerate the energy transition.**
- **At COP21 in Paris in 2015, eleven countries made gas flaring a stated commitment to their Paris NDCs (Nationally Determined Commitments). Disappointingly, five years on, flaring has increased for these eleven countries, by 6% to 60 Billion Cubic Metres (BCM) per year.**
- **Ambition without a plan is insufficient – and we need a more concerted effort to reduce flaring over the next five years. Countries (*and more than just eleven in 2015*) need to step up their ambition levels. But they also need to deliver actual on-the-ground capture projects. Innovation in policy, operational and financing models are required to accelerate change – supported by clear political will.**
- **COP26 is the moment for governments to raise ambitions. Gas flaring projects need to be appropriately included in the next round of commitments and negotiations. After all, governments and national oil companies are responsible for a disproportionate share of global gas flaring. And these groups can provide the operating and regulatory environment to accelerate flaring reduction.**
- **With the US re-joining the global compact and focusing on its own flaring challenges, the world should again concentrate on flaring. This time at COP26, we need bold commitments that actually get delivered. Delivery will require strong political will, support and investment. And the best way to ensure delivery happens is by putting flaring in the spotlight at COP26.**

Why flaring matters

Gas flaring is a major source of economic and environmental waste. Globally, 150 Billion Cubic Metres (BCM) of gas is flared per year, according to the World Bank. That’s large enough such that, if it were a country, “flaring” would be the 5th largest gas-consuming country globally (after US, Russia, China and Iran).

Flaring also leads to an annual revenue loss of \$20 billion and direct emissions of 280 million tonnes of CO₂ per year. And when the “methane slip” (associated with

incomplete combustion of flares) is included, the emissions from flaring rise to at least 1.2 billion CO₂-equivalent tonnes¹. Now, that's material, at 2% of the world's 51 billion tonnes of CO₂-equivalent emissions. And on top of gas flaring is also venting and leaking/fugitive emissions (see "[New data accelerates global call to action](#)").

With emissions, therefore, equivalent to 1 to 1.5x that of airlines, it is perhaps surprising that flaring doesn't get more global attention. Especially so since existing technologies can solve a chunk of the flaring challenge within a decade. (For aviation, despite outstanding progress, battery and H₂ technology are still a way off).

Flaring and COP

At the COP21 in 2015, 194 states signed the Paris climate agreement and committed to so-called National Determined Contributions (NDCs). Of these, 11 countries have made specific NDC contributions from flared gas utilisation – and others refer to flare reduction in their LEDS ("long-term low greenhouse gas emission development strategies"²).

We explore below the disappointing lack of global progress on flaring since 2015. But we are also concerned that flaring may not get enough attention in the COP process (which is one reason we've written this paper). We understand that in today's world, directing political capital to the oil and gas industry may be unpopular or be seen to inconsistent with the direction of travel.

But, the world also would be wise to recognise that fossil fuel extraction will probably be around for a couple of decades at least. Especially so since the most robust oil suppliers (those with the lowest unit production cost) also tend to be those with the highest rates of flaring. The Middle East, in particular (which is 40% of the global challenge, [see article](#)), is likely to have an even more dominant role in a world of lower oil demand and lower oil prices.

And if the economic and environmental loss of not "monetising every molecule" (or providing reliable power) is not enough, exporters should be mindful that, without addressing the carbon intensity issues, their gas (which is increasingly under scrutiny for more aware consumers) will be uncompetitive.

¹ using the IPCC's Global Warming Potential of methane being 84x that of CO₂, over a 20-year basis.

² "[Untapped ambition: addressing fossil fuel production through NDCs and LEDS](#)", June 2019; Stockholm Environment Institute.

Indeed, a recent Oxford paper³ noted: “*it will be of paramount importance for ... gas producing countries to cut their emissions in the gas value chain, in order to preserve their position and geopolitical influence ... [otherwise their] role will shrink as [e.g.] the European Green Deal is implemented*”. We made a similar point in our article “[12 things the EU should do about gas flaring](#)” and note the importance of developing certification standards, such as those driven by [MIQ](#).

Low-level flaring will always be required for safety reasons. Flaring is also an acceptable outcome for unexpected operational challenges. But as long as petrostates produce oil, they will also have clear economic and environmental imperatives to end *routine* (i.e. continuous) flaring.

Taking stock of flaring since COP21 in Paris

So as the world prepares for COP26, it's worth taking stock of the progress and outlook for gas flaring reduction. So-called “flare capture projects” (that capture, store and transport associated gas from oil production sites for power generation and other productive uses are) should make a difference. A big difference: gas flaring wastes the equivalent of 100 GW of continuous power (almost 900 TWh, 3% of all power generated in 2019) and could displace up to 9% of all coal-generated power.

But data from the World Bank's Global Gas Flaring Reduction (GGFR) programme⁴, supplemented by Capterio's proprietary “Global Flaring Intelligence Tool” (GFIT), highlights that:

- Since the Paris agreement in 2015, **global gas flaring has increased by 3%** from 146 BCM to 150 BCM in 2019. The cumulative waste is some \$100 billion in lost potential revenue.
- **The flaring from the 11 countries that specifically identified flaring as a significant component of their NDCs has increased by 6%**, from 56 BCM to BCM of gas (40% of the global total), meaning that we have made no progress over this period, and these countries have performed worse than the global average. Whilst this is particularly disappointing, the picture varies by country in detail.
- **More specifically, the gains seen from reductions in flaring in 3 countries are offset by increased flaring in 8 countries.**

³ Raimondi and Tagliapietra, “*The geopolitical implications of global decarbonisation for MENA producing countries*” in the latest quarterly journal on energy from the Oxford Institute for Energy Studies (Issue 26, February 2021).

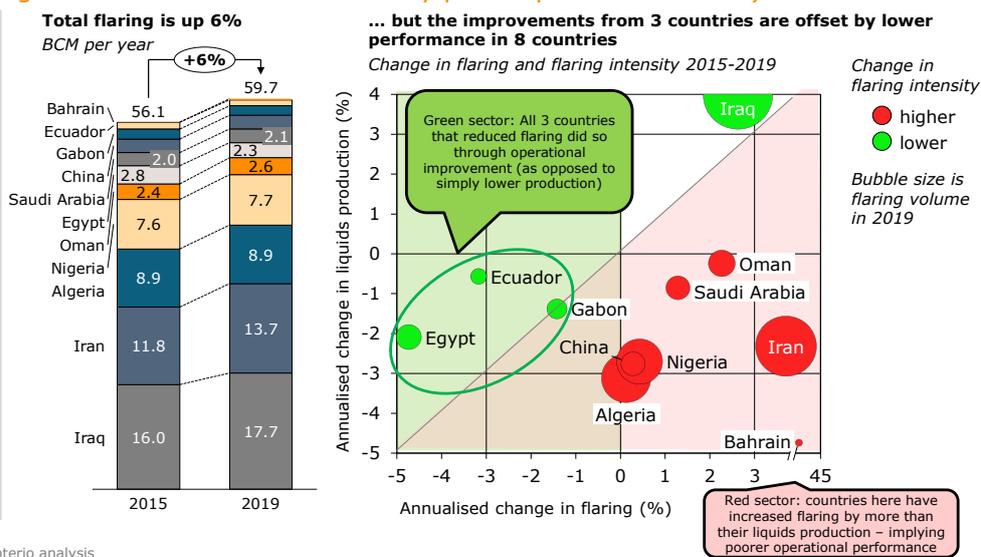
⁴ A Multi-Donor Trust Fund composed of governments, oil companies, and multilateral organizations working to end routine gas flaring at oil production sites across the world, see <https://www.worldbank.org/en/programs/gasflaringreduction>

Over this period, Egypt, Gabon and Ecuador have reduced flaring by 1-5% per year⁵. And as the figure shows, whilst the underlying liquids production is lower in each country, the reduction in flaring is greater – therefore the improvement is not simply due to a decrease in oil production. Rather, the decreased flaring is also helped by a lower flaring intensity (flaring per unit oil production), which may result from better underlying operational performance.

Conversely, all other countries increased their flaring. All but Iraq also increased their flaring by more than they increased their oil production – meaning that their flaring intensity increased as their operations’ underlying performance has probably become poorer (and are in the red sector). Flaring intensities have increased by 6.2% in Iran, by 3.3% in Algeria, 3.2% in Nigeria and 3.1% in China, for example.

11 countries made flare reduction a key commitment at Paris – but their flaring is up by 6% (as gains in 3 countries are offset by poorer performance in 8)

- Gas flaring is a key source of economic waste
- 11 countries made explicit reference to flare reduction from “associated gas utilisation” in their NDCs
- Algeria, Bahrain, China, Ecuador, Egypt, Gabon, Iran, Iraq, Nigeria, Oman, Saudi Arabia
- However, the data shows no aggregate change since Paris in 2015 – and the improvements in 4 countries are offset by poorer performance in 7



Source: World Bank; EIA; Capterio analysis

Figure: Illustration of the progress made by the 11 countries that specifically referenced flare gas capture as a key contribution to their 2015 NDCs at Paris COP21. Despite their commitments under Paris, these 11 countries have not delivered flared reduction in aggregate, rather flaring has increased by 6%. In detail, the good progress by 3 countries is offset by the greater flaring in 8.

⁵ For clarity, we do not rule out the possibility that lower flaring is due to increased venting (which would, of course be far worse for the environment, given the high potency of methane as a greenhouse gas.

Countries need to make substantial flaring reduction commitments at COP26

The good news is that our analysis has highlighted that many flare capture projects not only reduce emissions (of CO₂, and most significantly, of methane from incomplete combustion) but also create value (see our paper "[why flare capture projects make sound ESG investments](#)").

We are working on a range of attractive and investable flare capture projects that have intrinsically-investable Intrinsic Rates of Return (IRRs) in the 20-60% range, and each reduces emissions by up to 1 million CO₂-equivalent tonnes per year. These projects also create much-needed governments revenues, can provide reliable power, create jobs, reduce air pollution (and hence, save lives), improve countries' investment credentials and demonstrate international leadership.

But despite many projects are intrinsically attractive, not enough is happening. We think this is mainly due to a "market" or "system" with the status quo. Our research (see "[how to fix flaring – survey results](#)") explored why and identified that flares are still not sufficiently "on the radar" of operators and governments, there are "*perceived economic challenges*" (some of which are just perceptions, and many can be solved with agile approaches), and the industry has a "lack of (spare) resources".

So, whilst the industry is facing the challenge of doing more (towards net-zero) with less (fewer people and lower budgets), we need to rethink how we make flare reduction happen. The good news is, the world can drive faster change if we:

- **Improve focus on data and transparency.** Flaring is highly visible, and the data is in the public domain – so there is nowhere for producers to hide. Given that *what gets measured get bettered*, operators and governments need to hold each other to account to deliver action. RMI's [Climate Action Engine](#) is one such open-source tool that is already driving action. The companies and countries that have joined the GGFR's voluntary [Zero Routine Flaring](#) (by 2030) initiative should be transparently reporting on the delivery of these commitments.
- **Increase government commitment, enforced by capable regulators** with material incentives for flaring reduction. Norway has a particularly effective combination of policy and financial penalties that has led to very low flaring (see "[lessons on flaring from the North Sea](#)"). Russia and Nigeria, on the other hand, have regulations which are largely unenforced.
- **Unlock funding, speeding up the approval processes and ensure timely execution** of flare capture projects. Financing groups and regulators need to streamline processes. Those international or multilateral finance groups that

are committed to selectively investing in gas decarbonisation projects can play a leadership role here.

- **Promote new operating models to deliver scalable flare capture projects**, including innovative technologies or commercial structures. Developed countries can provide technical assistance and know-how. Companies such as Capterio bring technical solutions and funding (enabling flare capture projects to be delivered *without drawing on the operators' limited budgets or scarce technical skills*). Algeria's recent *New Hydrocarbon Law* helps to facilitate this innovation.
- **Ensure that buyers are empowered to choose between low- and high-flaring sources of production**, applying consumer pressure to upstream operators. Players like MIQ (www.miq.org) are setting the standard for low methane gas – and this transparency also needs to apply to flaring. Companies and countries that do not deliver low flaring gas will find themselves disadvantaged either on pricing or market access.

The above five recommendations are practical and straightforward. Taking the heat out of flaring is not rocket science. But only by delivering on the above will we deliver the 90% reduction in flaring by 2030 required for IEA's Sustainable Development Scenario (see [article](#)).

The prize is clear – and flare capture projects really do make sound ESG investments.

COP26 is the moment for governments to raise ambitions. COP26 should also be a key milestone – if not a forcing mechanism – for real change. By focussing on this issue now, with luck, the industry can showcase some ground-breaking flare capture programmes in Glasgow in November. By materially upping the commitments and showing a credible plan to deliver these commitments, countries with significant gas flaring can show international leadership.

Let's ensure that gas flaring ("*the world's 5th largest country*") is in the spotlight at COP26.

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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.