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Global Flaring and Methane Reduction Partnership (GFMR)

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### **Gas Flaring Explained**

- What is gas flaring?
- Why is gas flared?
- What are the environmental impacts of gas flaring?
- How can we reduce the amount of gas being flared?
- What is being done about gas flaring?

## What is gas flaring?

Gas flaring is the burning of the natural gas associated with oil extraction. The practice has persisted from the beginning of oil production over 160 years ago. It takes place due to a range of issues, from market and economic constraints, to a lack of appropriate regulation and political will. Flaring and venting are a waste of a valuable natural resource that should either be used for productive purposes, such as generating power, or conserved. For instance, the amount of gas currently flared each year – about 148 billion cubic meters – could power the whole of sub-Saharan Africa.

What is Gas Flaring?



Image: Ed Kashi/World Bank

## Why is gas flared?

Flaring persists to this day because it is a relatively safe, though wasteful and polluting, method of disposing of the associated gas that comes from oil production. Utilizing associated gas often requires economically viable markets for companies to make the investments necessary to capture, transport, process, and sell the gas.

#### What is Gas Flaring?



Image: Gribov Andrei Aleksandrovich

In addition to these GHG emissions, black carbon - more commonly known as soot - is another pollutant sometimes released by gas flares. Black carbon is produced through the incomplete combustion of fossil fuels and, despite remaining in the atmosphere for just a few days or weeks, has a very large if short-term climate impact. This is of particular concern in the Arctic, where black carbon deposits are believed to increase the rate at which snow and ice is melting. Research from the European Geosciences Union indicates that gas flaring emissions may contribute about 40 percent of the annual black carbon deposits in the Arctic.

### How can we reduce the amount of gas being flared?

Oil producers can either re-inject associated gas or use it for productive purposes. However, operators often face significant challenges capturing, treating, storing, transporting, and commercializing associated gas, and the cost of ending all routine flaring could be more than US\$100 billion.

The traditional approach to flare gas utilization – collecting associated gas and transporting it through a gas pipeline – is heavily dependent on achieving economies of scale. To be viable, operators must typically capture a large quantity of associated gas from many flare sites, ideally located close to one another, and then build the infrastructure needed to commercialize the gas. For example, to generate power and increase energy access.

There are, however several alternative ways to address the routine gas flaring problem. Meanwhile, governments can put in place a range of effective regulations and policies to incentivize and encourage gas flaring reduction.



Image: Nico Traut

Developments in small-scale gas utilization technologies have also greatly improved the potential for associated gas use in recent years. However, not all such technologies are economical, and much depends on fuel and end-product prices. Small electricity generation plants, truck-mounted, liquefied natural gas plants, and integrated compressed natural gas systems are often viable alternatives to flaring – but they can be expensive to implement.

## What is being done about gas flaring?

Encouragingly, while oil production has increased by around 28 percent since 1996, the amount of associated gas flared has decreased by 11 percent. This means that the oil industry is making progress because we are seeing a gradual decoupling of a long-standing correlation between oil production and gas flaring.

Many oil field operators who flare associated gas, are making the investments necessary to reduce flaring. Many have also made the commitment to end routine flaring.

In 2015, the World Bank and the UN Secretary-General launched the **Zero Routine Flaring by 2030 (ZRF) initiative**, which commits governments and oil companies to not routinely flare gas in any new oil field development and to end existing (legacy) routine flaring as soon as possible and no later than 2030.

## More information

https://www.worldbank.org/en/programs/gasflaringreduction/gas-flaring-explained