

Massive methane leaks that must be prevented

The climate warming that we are experiencing is due to the accumulation in the atmosphere of gases that hinder the escape to space of the heat we receive from the sun. Carbon dioxide (CO₂) is the main contributor to the additional greenhouse effect caused by man's action, followed by methane. Methane is a powerful greenhouse gas. Although its concentration per unit volume in the atmosphere is over 200 times less than that of CO₂, its contribution to the global warming observed since the beginning of the industrial age is 2/3 that of CO₂. Methane is particularly noxious for the climate in the short term: its residence time in the atmosphere before it is oxidized into CO₂ is about 12 years. Its global warming potential is ≈30 times that of the same mass of CO₂ when considering the impact over a period of 100 years; but, in the shorter term, if we consider a period of 20 years, this warming potential of methane is no longer 30 times but 90 times that of CO₂. Given the climate urgency, it is very important to considerably reduce the emissions of various greenhouse gases without delay, especially those that have a strong short-term effect, such as methane.

How do things stand with methane emissions? In recent years, satellite observations¹ have revealed methane emissions that were not previously recorded in the inventories of the countries concerned. These emissions are linked to the production of natural gas (which is none other than methane) and oil. The satellite collects data over the entire globe, except for areas that cannot be observed with sufficient accuracy due to local atmospheric conditions: Arctic, tropical areas, Permian basin in Texas, offshore sites.

Over 2 years, more than 1 800 very intense emission events, each exceeding 150 metric tons of methane per hour were detected. The total emissions of these super-emitters amount to about 8 million metric tons per year. Their impact is comparable to that of 20 million vehicles for a whole year, or to that of all the greenhouse gases emitted during 15+ years by Australia or by the Netherlands. These massive methane emissions are due either to leaks or to maintenance operations on installations and pipelines (with voluntary discharges that represent the greater part of the total). There are ways to recover the gas lost in this way: the costs incurred would not be very significant and it would be very useful in the fight against global warming. If the commercialization of the recovered gas were to prove unprofitable, it would be better to flare it than release it into the atmosphere, since the CO₂ produced in the combustion has a much lower global warming potential than methane, as discussed above.

Regrettably, acting to protect the climate does not currently seem to be a matter of concern for a number of gas and oil producing countries, despite their pretty speeches.

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