



Answer to the European Consultation

European regulation on methane emissions reduction in the energy sector

Date of issue: March 2022

Summary

CEA welcomes the European Commission's commitment to reduce anthropogenic methane emissions. The present draft regulation covering emissions from the fossil fuel sector will have to be supplemented by other regulations to cover the agriculture-livestock sector and the waste management sector (landfills and water treatment), which are other major methane emitters.

Nonetheless, monitoring methane concentration levels is not appropriate to characterise methane leaks, as set out in the regulation. The relevant unit to monitor methane emissions is rather the mass of methane emitted into the atmosphere, and therefore, monitoring obligations should build on flow rates and duration of methane leaks.

Moreover, since some leaks are intermittent, measurements must be taken continuously.

Finally, most of methane emissions resulting from the use of fossil fuels in Europe are issued outside of the European Union. Beyond the necessary measures to improve the monitoring of emissions, it is therefore needed to strengthen incentives to reduce them. CEA therefore calls on the Commission to set up a system of economic valuation of methane emissions, in order to encourage importers to favour suppliers with low methane emissions during the extraction, purification/refining and transport stages of their activities.

CEA welcomes the European Commission's commitment to reduce anthropogenic methane emissions, the second largest contributor to global warming after carbon dioxide. The fossil fuel sector (coal, oil and gas) is a major contributor to these methane emissions, even if it is not the only nor the main contributor at the global level.

This draft regulation should therefore be supplemented by other regulations aimed at quantifying, monitoring and reducing methane emissions in the agriculture-livestock and waste management sectors.

A concentration criterion is not appropriate to characterise a leakage rate

The draft regulation proposes criteria for maximum acceptable leakage rates based on a concentration unit (e.g. Article 14, paragraph 4). Concentration is an intensive magnitude that cannot be sufficient to characterise the extent of a leak: the flow rate and duration of the leak are missing to quantify the mass of methane released into the atmosphere. Indeed, a leak of concentrated methane with a low

flow rate may lead to a lower release of methane into the atmosphere than a leak of less concentrated methane with a higher flow rate. What therefore matters is the mass of methane released, not the methane concentration at the source of the leak. In addition, imposing concentration thresholds may provide an incentive to increase ventilation rates (particularly in underground mines) to reduce concentration results without reducing the actual quantity of methane emitted (it would simply be emitted in a more diluted form).

Methane emissions criteria should therefore be formulated in kg/hour, or any other extensive magnitude corresponding to a flow rate. An assessment of the duration of the leak in order to estimate the mass released into the atmosphere is also necessary.

With regard to closed and abandoned mines, and in addition to the previous remark, the criterion in terms of detection threshold for measuring devices – i.e. 10,000 ppm or one per cent – is extremely high (i.e. not very restrictive). Actually, the draft regulation should be clarified on this particular point:

- either the draft regulation stipulates that this equipment must be deployed inside sealed mines, i.e. mines whose interior environment does not communicate with the outside one. In this case, high methane concentrations can be expected, but they are not methane emitters (the mines are sealed);
- or the draft regulation stipulates that this equipment must be deployed on the ventilation shafts of former mines and measure actual methane emissions into the atmosphere. In which case, the detection threshold should be significantly lowered and, here again, concentration as a criterion for leakage rate, replaced with a more appropriate one.

Methane leakage from the fossil fuel sector is often intermittent. Measurements must therefore be taken and recorded continuously.

Improving the criteria for detecting methane leaks

The European Commission should set a target to develop airborne and space-based remote sensing capabilities for systematic monitoring of small-scale leakage (less than 0.05 tCH₄/h), through the Copernicus programme.

It is necessary to strengthen incentives to reduce methane emissions issued outside of the EU

The European Commission recognises that most of the methane emissions from fossil fuel consumption in the EU occur outside the EU, upstream in the supply chain: during the extraction, purification/refining and transport¹ stages. The transparency measures proposed by the Commission are a step in the right direction, but they still rely too much on the goodwill of the various players. **In practice, it is unlikely that European importers whose gas supply choices are based primarily on**

¹ T. Lauvaux, C. Giron, M. Mazzolini, A. d'Aspremont, R. Duren, D. Cusworth, D. Shindell, P. Ciais, "Global Assessment of oil and gas methane ultra-emitters", *Science* 375, 557-561 (2022)

economic considerations will voluntarily and without economic or regulatory incentive decide to change supplier to reduce the methane footprint of their imports.

The part of the draft regulation concerning methane emissions outside the European Union linked to the consumption of fossil fuels imported into the Union must therefore be significantly strengthened.

Reinforced reporting

Operators of gas, coal and oil-fired power plants in Europe should be required **to report on greenhouse gas intensity of the energy delivered**, in the form of electricity and/or heat, taking into account not only operational CO₂ emissions as is the case today, **but both CO₂ and CH₄ emissions on a life-cycle basis. These emissions should be reported separately.** For methane, life-cycle emissions should not be calculated using a generic global average emission factor, but emission factors specific to the origin and means of transport of the fossil fuels concerned.

Metrics comparing CO₂ and CH₄ emissions should be reviewed periodically in the light of scientific knowledge to ensure effective implementation of the Paris Agreement in terms of mitigation costs².

This increased transparency will reduce the risk of promoting the replacement of coal-fired power plants by fossil gas-fired power plants if the supply of gas (taking into account the origin and means of transport of the gas) makes the climate benefit of such substitution uncertain.

Similarly, **methane emissions rates monitored on a full life-cycle basis and estimated using emissions factors reflecting the exact geographical origin and means of transport of the fossil gas, must be included in the calculation of the carbon balance of the various uses of gas:** heating, industry, etc.

European methane leakage reduction targets must include methane emitted outside the EU

The European Union has set a target of reducing methane emissions from its energy sector by 58% in 2030 compared to 2020. This target must include the methane emitted outside the EU in the course of ensuring the supply of fossil fuels of the EU. This is an essential condition for being able to apply this objective at the level of the Member States and to encourage them to take into account the upstream methane balance when developing their energy and fossil fuel supply strategies.

A need for an economic incentive to reduce the methane footprint

Countries outside the European Union that supply fossil fuels – and more particularly natural gas – to the European Union will only have a real incentive to take action to reduce their emissions if it conditions the volumes of gas they can sell to the Union. In order to create such an incentive, **it is necessary to encourage companies importing fossil gas into the European Union to integrate the parameter of upstream methane emissions into the selection of their suppliers.**

² K. Tanaka, O. Boucher, Ph. Ciais, D. J. A. Johansson et J. Morfeldt, « Cost-effective implementation of the Paris Agreement using flexible greenhouse gas metrics », *Sci. Adv.* 2021 ; 7



The European Union should therefore adopt a system to give an economic value to methane emissions, as may exist for carbon dioxide. This could be done through taxation or *via* an emissions trading system for methane, encompassing full life-cycles.

For example, the gas system could be integrated into the EU ETS. At delivery points (pipelines and regasification terminals), upstream emissions assessed according to the origin of the gas and its transport would be converted into CO₂ equivalent. The importer would then have to cover them by buying emission allowances. For fairness and robustness reasons taking into account the WTO rules, gas extractions within the European Union should be subject to the same system. In addition, emissions downstream of entry points into the EU should also be subject to the EU ETS. These would be equal to the difference between the volumes received by transmission operators and those sold to distribution operators or other transmission operators.

Whatever system the Commission chooses, the importer must have an economic interest in favouring gas suppliers with low methane emissions during the extraction and transport stages.