Opinion of the European Economic and Social Committee on 'Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions on an EU strategy to reduce methane emissions'

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Rapporteur: **Udo HEMMERLING**

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(for/against/abstentions)	252/5/4

1. **Conclusions and recommendations**

1.1. The European Economic and Social Committee (EESC) supports the goal and basic thrust of the EU Methane Strategy, aimed at further significant reductions in methane emissions for climate protection.

1.2. Focussing on those sectors which produce the main methane emissions, namely agriculture, energy and waste management, is reasonable.

1.3. The methane strategy should be tied in with the bioeconomy and circular economy strategies.

1.4. It strongly supports the focus on better measurement of methane emissions and on international mitigation initiatives. Methane emissions often come from decentralised, diffuse sources along international production and supply chains.

The EESC proposes incorporating the following in the EU Methane Strategy:

1.5. The largely diffuse sources of methane and the complex measurement of methane emissions often make it difficult to monitor emissions. Improved monitoring should be developed in a consistent, comparable way for the sectors concerned, such as agriculture, energy, waste and the chemicals industry.

The direct inclusion of or direct pricing arrangements for diffuse methane emissions in a greenhouse gas trading system is most difficult and often impossible. Where possible, however, measurement of point-source emissions should be pursued taking the same approach to all emitters.

1.6. Member States should in their climate change plans set out their progress with and the potential for using biogas from slurry and manure, bio-waste, waste water, landfills and mine gas and define measures to increase the use thereof.

1.7. There is still considerable potential in agriculture for cutting back methane emissions, above all through the digestion of slurry and manure in biogas plants, as well as progress in feeding and breeding farm animals and low-emission fertiliser use. This potential should be further defined as part of the implementation of the EU Methane Strategy.

1.8. In waste management, separate collection and recovery of bio-waste should gradually become the norm throughout the EU. This creates the right conditions for further avoidance of methane emissions in this sector.

2. **Overview of the European Commission's Methane Strategy**

2.1. Methane represents 10,5 % of the EU's total greenhouse gas emissions of 3,76 billion tonnes of CO_2 equivalent (2018). Methane emissions have been cut back by almost 34 % since 1990.

2.2. The methane strategy addresses the main anthropogenic methane emissions and the emitting sectors — agriculture, waste and energy (accounting for 53 %, 26 % and 19 % of methane emissions, respectively) — and proposes mitigation measures. Natural methane emissions, e.g. from wild ruminants or marshes, are not therefore covered by the strategy.

2.3. Reducing methane emissions worldwide can make a major contribution to mitigating climate change. Halving today's global methane emissions would have a global cooling effect of 0,18 degrees Celsius by 2050.

2.4. The EU is responsible for 5 % of global methane emissions. It significantly induces further methane emissions in third countries through the import of fossil gas, oil and coal. Therefore, the European Commission proposes undertaking action to reduce these emissions along international supply chains.

2.5. It is proposing to significantly improve the measurement and reporting of methane emissions.

2.6. The methane strategy does not specifically look into current scientific knowledge on the particular effects of methane as a short-lived GHG (see point (3).

3. **Knowledge on the climate impact of methane and implications for a policy of climate neutrality**

3.1. One of the basic characteristics of methane (CH_4) as a GHG is that it has a relatively short lifetime and breaks down in the atmosphere into water (H_2O) and CO_2 over a period of about 12 years. This has decisive consequences for its climate impact and the comparison with CO_2, which is used as a point of reference in climate footprints.

3.2. CO_2 is stable in the atmosphere and, unlike methane, does not break down, so is also referred to as a long-lived GHG ('stock gas'). As a result, CO_2 emissions continue to accumulate in the atmosphere, for example through the burning of fossil fuels (all other things being equal), thus constantly increasing the concentration of CO_2.

3.3. By contrast, emissions of short-lived GHG ('flow gases') such as methane are offset by their natural decomposition process. Their short lifetime therefore results in emissions being offset by their removal, leading to stable atmospheric concentrations when emissions are stable.

3.4. In addition to the short lifetime of methane, its origin is also decisive for the impact on the climate, as its decomposition produces the GHG CO_2. The CO_2 resulting from the decomposition of biogenic methane (e.g. from ruminant digestion and wet rice cultivation) was previously removed from the atmosphere through plant growth by means of photosynthesis and is therefore basically in a loop, which does not change the concentration of CO_2 in the atmosphere.

3.5. By contrast, the decomposition of fossil methane (e.g. from natural gas, oil and coal) to form CO_2 and water constitutes an additional source of CO_2 for the atmosphere and thus increases the CO_2 concentration therein.

3.6. These characteristics of methane have a series of consequences for climate impact and for devising climate policy. This is particularly true for the goal of climate neutrality. Constant emissions of (biogenic) methane, as a short-lived GHG, lead in the medium term to a constant concentration of methane in the atmosphere, with a constant radiative effect on the climate system and consequently a constant effect on temperature. If methane emissions decrease, the concentration in the atmosphere decreases, leading to a decrease in the radiative effect and thus a decrease in temperature (cooling effect).

3.7. On the other hand, constant CO_2 emissions lead to an increase in the concentration of CO_2 in the atmosphere as long as CO_2 is being emitted. Even after CO_2 emissions have stopped, the previously deposited CO_2 remains in the atmosphere at the same concentration, resulting in a continued radiative effect and permanent warming effect.

3.8. So in order to achieve a climate-neutral outcome, different approaches to short- and long-lived GHG are needed. In order to bring temperature levels back down to those existing prior to CO_2 emissions, offsetting the permanent temperature increase caused by the continued radiative effect of CO_2, CO_2 concentration in the atmosphere needs to be actively reduced by means of CO_2 sinks. Also, in order to bring down temperature levels where CO_2 emissions continue (because they are unavoidable), the same amount of CO_2 needs to be continuously removed from the atmosphere as is being added (net-zero emissions). This is reflected in the net-zero greenhouse gas emissions goal. However, climate-neutral effects are already achieved with stable emissions from (biogenic) methane sources, while offsetting methane emissions converted into CO_2 equivalent by removing GHG from the atmosphere leads to a cooling effect.

3.9. Net zero expressed in CO_2 equivalent is therefore not an appropriate policy approach for methane as a short-lived GHG. The New Zealand Zero Carbon Act, for example, contains a separate assessment of methane emissions. The climate impact of short-lived GHG should be reflected in GHG balance sheets with more appropriate metrics. (See the University of Oxford’s work on this matter: https://iopscience.iop.org/article/10.1088/1748-9326/ab6d7e).

4. **Methane emission abatement — Additional comments**

4.1. A change in consumer behaviour definitely has the potential to reduce greenhouse gas emissions. This also applies to nutrition — specifically the recommendation to reduce consumption of animal products. For climate policy, however, it should be borne in mind that in an open society these involve voluntary changes in people’s lifestyles.

4.2. In agriculture, alongside ways of reducing methane emissions from livestock farming, connections with land use should also be taken into account. More specifically, ruminants constitute the key basis for using and preserving grassland. Its preservation is, in turn, very important from a climate policy point of view due to the CO_2 sequestered in soil humus.

4.3. As regards methane gases from landfills, sewage works or from disused coal mines, some EU countries do not yet have comprehensive arrangements for collection and energy use.

4.4. For waste collection, many Member States do not yet have comprehensive systems for the separate collection and recovery of biogenic waste. This hinders maximum avoidance of methane emissions from composting or digestion (biogas) in the treatment of bio-waste.

4.5. As far as imports of fossil fuels such as natural gas, oil and coal are concerned, the EU has not yet imposed any specific requirements in relation to nature conservation or environmental or climate protection. The announced development of methane emission abatement requirements should be part of a broader initiative to reduce the environmental footprint of these energy imports under the Green Deal.

4.6. Natural methane emissions should also be identified on an indicative basis as part of expanded monitoring of anthropogenic methane emissions to provide a comprehensive overview.

4.7. Research, development and further market penetration of methane abatement technologies should be fostered in European networks, with the involvement of the economic and social partners.

Brussels, 24 March 2021.

The President
of the European Economic and Social Committee
Christa SCHWENG