European Parliament
2019-2024

Plenary sitting

A9-0277/2021

4.10.2021

REPORT

on an EU strategy to reduce methane emissions
(2021/2006(INI))

Committee on the Environment, Public Health and Food Safety

Rapporteur: Maria Spyraki

Rapporteurs for the opinion (*):
Cristian-Silviu Buşoi, Committee on Industry, Research and Energy
Asger Christensen, Committee on Agriculture and Rural Development

(*) Associated committees – Rule 57 of the Rules of Procedure

CONTENTS

Page

MOTION FOR A EUROPEAN PARLIAMENT RESOLUTION

on an EU strategy to reduce methane emissions
(2021/2006(INI))

The European Parliament,

– having regard to Article 192 of the Treaty on the Functioning of the European Union,

– having regard to the agreement adopted at the 21st Conference of the Parties (COP21) to the UN Framework Convention on Climate Change (UNFCCC) in Paris on 12 December 2015 (the Paris Agreement),

– having regard to Regulation (EU) 2018/1999 of the European Parliament and of the Council of 11 December 2018 on the Governance of the Energy Union and Climate Action[1],

– having regard to Regulation (EU) 2021/1119 of the European Parliament and of the Council of 30 June 2021 establishing the framework for achieving climate neutrality and amending Regulations (EC) No 401/2009 and (EU) 2018/1999 ('European Climate Law')[2],

– having regard to the Commission communication of 20 May 2020 on an EU Biodiversity Strategy for 2030: bringing nature back into our lives (COM(2020)0380),

– having regard to the Commission communication of 20 May 2020 on a Farm to Fork Strategy for a fair, healthy and environmentally-friendly food system (COM(2020)0381),

– having regard to the Commission communication of 14 October 2020 on an EU strategy to reduce methane emissions (COM(2020)0663),

– having regard to its resolution of 28 November 2019 on the climate and environment emergency[3],

– having regard to its resolution of 15 January 2020 on the European Green Deal[4],

– having regard to its resolution of 10 February 2021 on the New Circular Economy Action Plan[5],

– having regard to its resolution of 25 March 2021 on the implementation of the Ambient Air Quality Directives: Directive 2004/107/EC and Directive 2008/50/EC[6],

---

[1] OJ L 328, 21.12.2018, p. 1.
[2] OJ L 243, 9.7.2021, p. 1.
[3] OJ C 232, 16.6.2021, p. 28.
[4] OJ C 270, 7.7.2021, p. 2.
[5] Texts adopted, P9_TA(2021)0040.
[6] Texts adopted, P9_TA(2021)0107.

– having regard to the International Energy Agency report of October 2018 entitled ‘The Future of Petrochemicals: Towards more sustainable plastics and fertilisers’,

– having regard to the UN Environment Programme’s Emissions Gap Report of 26 November 2019 and its first synthesis report on fossil fuel production of 20 November 2019,

– having regard to the UN Environment Programme report of 6 May 2021 entitled ‘Global Methane Assessment: Benefits and Costs of Mitigating Methane Emissions’,

– having regard to the International Energy Agency report of 18 May 2021 entitled ‘Net Zero by 2050: A Roadmap for the Global Energy Sector’,

– having regard to the European Environment Agency report of 23 November 2020 entitled ‘Air quality in Europe – 2020 report’,

– having regard to the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES) 2019 Global Assessment Report on Biodiversity and Ecosystem Services and 2020 Workshop Report on Biodiversity and Pandemics,

– having regard to the scientific opinion of March 2020 by the Group of Chief Scientific Advisors to the Commission entitled ‘Towards a Sustainable Food System: Moving from food as a commodity to food as more of a common good’,

– having regard to Rule 54 of its Rules of Procedure,

– having regard to the opinions of the Committee on Industry, Research and Energy and the Committee on Agriculture and Rural Development,

– having regard to the report of the Committee on the Environment, Public Health and Food Safety (A9-0277/2021),

A. whereas methane is a powerful greenhouse gas, over 80 times more potent than carbon dioxide (CO_2) over a 20-year period, making it the second most important greenhouse gas, as well as a precursor pollutant to ground-level ozone (O_3) contributing to about a quarter of the global warming experienced today[7]; whereas methane accounts for 10 % of total greenhouse gas emissions in the EU; whereas pathways modelled by the 1.5°C Special Report of the Intergovernmental Panel on Climate Change (IPCC), the IPCC Sixth Assessment Report and the 2021 Global Methane Assessment of the UN Environment Programme (UNEP) that limit global warming to 1.5°C with no or limited overshoot involve deep reductions in methane emissions; whereas according to the UNEP, reducing human-caused methane emissions by as much as 45 % will avoid nearly 0.3°C of global warming by the 2040s and complement all long-term climate change mitigation efforts;

[7] Myhre, G., D. Shindell, F.-M. Bréon, W. Collins, J. Fuglestvedt, J. Huang, D. Koch, J.-F. Lamarque, D. Lee, B. Mendoza, T. Nakajima, A. Robock, G. Stephens, T. Takemura and H. Zhang, ‘Anthropogenic and Natural Radiative Forcing’, *Climate Change 2013: The Physical Science Basis, Contribution of Working Group I to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change,* Chapter 8, Cambridge University Press, Cambridge, United Kingdom and New York, NY, USA, 2013, p. 714.

B. whereas in its report entitled ‘Net Zero by 2050: A Roadmap for the Global Energy Sector’, the International Energy Agency states that methane emissions from fossil fuels should be reduced by 75 % between 2020 to 2030 in the net-zero emissions scenario;

C. whereas a large number of the most cost-effective methane emissions savings can be achieved in the energy sector; whereas according to the UNEP’s Global Methane Assessment, methane emissions can be reduced by 45 % by the end of this decade and rapid and significant reductions in methane emissions are possible using existing technologies and at a very low cost; whereas the International Energy Agency’s Methane Tracker estimates that around 40 % of energy-related methane emissions can be abated at no-net cost, mainly by fixing methane leaks and eliminating vents in the fossil fuel sector;

D. whereas its Directorate-General for Parliamentary Research Services has noted the fact that methane emissions come from a wide range of sectors, namely agriculture, waste and energy, and that, once in the atmosphere, methane blends well with other gases, making it difficult to measure and report it; whereas uncertainty about methane emissions data is typically much greater compared to CO_2 emissions when excluding forest and other land-use-related emissions; whereas recent studies have estimated that global anthropogenic fossil methane emissions are underestimated by about 25 to 40 %[8];

E. whereas there is no policy in the EU to specifically set measures to reduce methane emissions in a cross-sectoral way;

F. whereas methane is a precursor gas for harmful ground-level ozone (O_3) and contributes to air pollution; whereas air pollution is the single biggest environmental health risk in Europe[9], with ground-level ozone contributing to nearly 20 000 premature deaths every year[10]; whereas tackling methane emissions is therefore not only an environmental and climate priority but also necessary to protect the health of EU citizens;

G. whereas increases in methane emissions have an impact on biodiversity and even food security; whereas reducing methane emissions can bring multiple benefits in addition to its cooling effects, including higher crop yields and food security;

H. whereas EU legislation that helps to provide information on methane emissions already exists, including Regulation (EC) No 166/2006 on the European Pollutant Release and Transfer Register[11] and Directive 2010/75/EU on industrial emissions[12], but there is currently no policy in the EU that is aimed specifically at reducing methane emissions;

I. whereas the European Climate Law commits the EU to reaching climate neutrality by

---

[8] Hmiel, B., Petrenko, V.V., Dyonisius, M.N. *et al,* ‘Preindustrial $^{14}CH_4$ indicates greater anthropogenic fossil CH_4 emissions’, *Nature*, Vol. 578, 2020, pp. 409-412, among others.
[9] World Health Organization, *Ambient air pollution: a global assessment of exposure and burden of disease*, 2016.
[10] European Environment Agency, *Air quality in Europe – 2020 report*, p. 7.
[11] Regulation (EC) No 166/2006 of the European Parliament and of the Council of 18 January 2006 concerning the establishment of a European Pollutant Release and Transfer Register, OJ L 33, 4.2.2006, p. 1.
[12] Directive 2010/75/EU of the European Parliament and of the Council of 24 November 2010 on industrial emissions (integrated pollution prevention and control), OJ L 334, 17.12.2010, p. 17.

2050 at the latest with increased emissions reductions of at least 55 % by 2030 in line with the Paris Agreement; whereas addressing energy-related methane emissions is a key component of the European Green Deal as the sector where the more cost-effective methane emissions savings can be achieved; whereas measures in the agricultural and waste sectors are also necessary for achieving the EU's climate targets; whereas the EU strategy to reduce methane emissions notes that the EU should also play a leading role in ensuring methane emissions reductions at a global level, as the largest global importer of fossil fuels and a significant player in the agriculture sector; whereas the EU should develop effective methods for monitoring, reporting and reducing these emissions within the appropriate international forums, while making use of import regulations; whereas according to the European Environment Agency and based on data reported from the Member States to the UNFCCC, in the EU 53 % of anthropogenic methane emissions come from agriculture, 26 % from waste and 19 % from energy;

J. whereas over 80 % of the fossil gas, 90 % of the oil and 40 % of the coal consumed in Europe is imported and whereas most methane emissions resulting from EU consumption of fossil fuels occur outside the EU, making the EU the world's largest importer of fossil gas and an important driver of global methane emissions; whereas methane leakage during the production and transport of fossil gas is a significant contributor to methane emissions in the energy sector; whereas improving leakage detection and repair and strict rules on routine venting and flaring are essential measures to reduce methane emissions from the energy sector;

K. whereas fugitive emissions from leaking equipment, infrastructure or closed and abandoned sites, as well as emissions from venting and the incomplete combustion of methane, represent the majority of methane emissions in the energy sector;

L. whereas the reduction of methane emissions is indispensable in the fight against climate change and must be pursued at global and European levels, as indicated in the impact assessment for the 2030 climate target plan[13], which states that the greenhouse gas emissions reduction target of at least 55 % by 2030 requires methane emissions to be tackled in line with the goals of the Paris Agreement; whereas methane emissions contribute to air pollution and it is therefore necessary to tackle these emissions in order to protect the health of EU citizens and avoid negative effects on crops and the stability of ecosystems; whereas excessive administrative burdens when regulating methane both as a greenhouse gas and an air pollutant must be avoided;

M. whereas landfills of municipal solid waste have been identified as significant sources of methane and whereas in some Member States EU landfill regulations are not applied to a satisfactory degree, especially as regards controlling the accumulation and migration of landfill gases;

N. whereas according to the UNEP's Global Methane Assessment, 'reducing human-caused methane emissions is one of the most cost-effective strategies to rapidly reduce the rate of warming and contribute significantly to global efforts to limit temperature rise to 1.5°C'; whereas cutting methane emissions can have a major and

[13] Commission staff working document of 17 September 2020 accompanying its communication entitled 'Stepping up Europe's 2030 climate ambition: investing in a climate-neutral future for the benefit of our people' (SWD(2020)0176).

quicker impact on slowing the rate of global warming than reducing CO_2 emissions, since methane is a short-lived climate forcer with an atmospheric lifetime of about 12 years before being ultimately degraded to inter alia CO_2; whereas cutting methane emissions can produce the quickest cooling effect; whereas these measures must be complementary to the efforts that we must continue to make to reduce CO_2 emissions across all the sectors affected in order to achieve a climate-neutral economy by 2050;

O. whereas many of the measures that can be taken at farm level to slash methane are also effective in reducing ammonia, and thus constitute a double win for air quality;

P. whereas similarly to CO_2, there is no difference between the molecules of biogenic and fossil methane;

Q. whereas more than half of global methane emissions stem from human activities in three sectors: fossil fuels (35 %), waste (20 %) and agriculture (40 %); whereas in the fossil fuel sector, oil and gas extraction, processing and distribution account for 23 % and coal mining accounts for 12 % of global anthropogenic methane emissions respectively; whereas in the waste sector, landfills and waste water make up about 20 % of global anthropogenic methane emissions; whereas in the agricultural sector, livestock emissions from manure and enteric fermentation represent roughly 32 % and rice cultivation 8 % of global anthropogenic methane emissions respectively[14];

R. whereas there are plans to establish an international methane emissions observatory in collaboration with the UNEP, the Climate and Clean Air Coalition and the International Energy Agency;

S. whereas the intensity of methane emissions in the EU varies widely according to the degree of dependency on fossil fuel sources in the energy mix; whereas gas is only of a transitional nature taking into account the EU's dependency on third countries for its energy supply;

Cross-sectoral actions

1. Welcomes the cross-sectoral approach outlined in the EU strategy to reduce and mitigate methane emissions; calls on the Commission to propose a fair, comprehensive and clear legislative framework, setting binding measures and methane reduction targets covering all sectors, leading to a significant reduction of methane emissions in the EU by 2030, in line with the Paris Agreement and with the modelled pathways that limit global warming to 1.5°C from the IPCC 1.5°C Special Report, the IPCC Sixth Assessment Report and the UNEP Global Methane Assessment, in order to achieve the EU's environmental and climate objectives in synergy with European and international business;

2. Highlights the importance of achieving immediate and rapid reductions in methane emissions this decade as one of the most effective measures for EU climate action, paying attention to economic and social sustainability; notes that methane emissions reductions complement the necessary reductions in CO_2 emissions and that many of the emissions cuts required by the Paris Agreement could already be achieved with low-

[14] UNEP Global Methane Assessment 2021.

cost and technically feasible methane mitigation; calls on the Commission and the Member States to suggest and negotiate a binding global agreement on methane mitigation at the COP26 meeting in Glasgow in line with the modelled pathways that limit global warming to 1.5°C from the IPCC 1.5°C Special Report, the IPCC Sixth Assessment Report and the UNEP Global Methane Assessment; notes that the UNEP Global Methane Assessment quantified the global benefits for all market and non-market impacts to be approximately USD 4 300 per tonne of methane reduced and that approximately 1 430 annual premature deaths could be prevented per million tonne reduced; believes that an impact assessment accompanying the upcoming legislative proposal should therefore consider the costs of the proposed actions as well as the costs of inaction or delayed action;

3. Considers it of the utmost importance that all methane-emitting sectors reduce their emissions; acknowledges the need to ensure a just transition for sectors wherein methane emission reductions may have socioeconomic impacts;

4. Underlines the importance of adopting mandatory monitoring, reporting and verification (MRV) for all methane-emitting sectors, including through the adoption of rules, standards and methodologies; underlines the importance, moreover, of adopting mandatory leak detection and repair (LDAR) programmes covering the entire supply chain in the energy and petrochemical sectors; calls on the Commission to seek effective tools to improve the quality of measurement and reporting of these emissions in all sectors concerned; stresses that reporting data on methane emissions should be public or, in the case of sensitive information, available to the competent authorities and independent verifiers; stresses, nevertheless, that a lack of data is no reason not to proceed with action to reduce and mitigate anthropogenic methane emissions;

5. Underscores the need to revise EU climate and environmental legislation in a coherent manner to reflect enhanced ambition in line with the goals of the Paris Agreement; calls on the Commission to propose an overarching and binding legislative framework on methane emissions, to avoid unnecessary overlaps between the legislation, to ensure the consistency of the National Emission Reduction Commitments Directive[15] with meeting the EU's objectives on air quality, its 2030 climate goals, and its objective of achieving climate neutrality by 2050 at the latest, as enshrined in the European Climate Law and, accordingly, to revise the National Emission Reduction Commitments Directive as soon as possible; underlines that the binding emissions reduction targets for Member States in the Effort Sharing Regulation[16] is one of the key legislative tools to reduce methane emissions as part of overall greenhouse gas reductions, together with the upcoming revision of the Industrial Emissions Directive (IED)[17] and other legislation;

6. Believes that as part of the overall review of applicable legislation to reach the targets set out by the European Climate Law, it is appropriate to adopt binding EU methane

[15] Directive (EU) 2016/2284 of the European Parliament and of the Council of 14 December 2016 on the reduction of national emissions of certain atmospheric pollutants, OJ L 344, 17.12.2016, p. 1.
[16] Regulation (EU) 2018/842 of the European Parliament and of the Council of 30 May 2018 on binding annual greenhouse gas emission reductions by Member States from 2021 to 2030 contributing to climate action to meet commitments under the Paris Agreement, OJ L 156, 19.6.2018, p. 26.
[17] Directive 2010/75/EU of the European Parliament and of the Council of 24 November 2010 on industrial emissions (integrated pollution prevention and control), OJ L 334, 17.12.2010, p. 17.

reduction targets; notes the proposal in the Methane Strategy to review the National Emission Reduction Commitments Directive and welcomes the inclusion of methane among the regulated pollutants; calls on the Commission, furthermore, to include methane in the list of polluting substances laid down in Annex II to the IED and to expand the scope of the IED to better cover the methane-emitting sectors; believes that national targets under the Effort Sharing Regulation as regards methane emissions must be designed with full regard for the higher short-term climate impact of methane and the potential of reducing methane in the atmosphere to contribute to climate neutrality by 2050 at the latest;

7. Stresses the importance of developing an EU inventory of best practices and available technologies to promote the wider uptake of innovative mitigating actions across all the relevant sectors; underlines that such practices and technologies should require a robust scientific basis and should be in line with environmental objectives and that differences in access for operators to these practices and technologies need to be studied;

8. Points out that according to the UNEP Global Methane Assessment, the reduction of food waste and loss, combined with the shift to renewable energy and more energy efficiency, can reduce global methane emissions by 15 % by 2030, and would also bring complementary benefits such as helping to alleviate the pressure on ruminant and crop production;

9. Stresses that the upcoming regulatory measures on methane should strive to achieve significant emissions reductions swiftly and as cost effectively as possible and provide incentives and support for companies to achieve performance standards in an optimal manner, while fully respecting the polluter pays principle; underlines the fact that according to the UNEP Global Methane Assessment, approximately 60 % of the targeted measures available in the energy, waste and agriculture sectors are low cost, while 50 % have negative costs;

10. Recognises the importance of and the need to support voluntary industry initiatives aimed at reducing methane emissions; underlines, however, that there are limits to what can be achieved through voluntary action alone and that regulatory measures are now needed to step up the reduction of methane emissions necessary to achieve the climate objectives of the Paris Agreement; considers that regulatory initiatives should take into consideration best practices from existing voluntary actions and must be preceded by thorough impact assessments, involve all the stakeholders in order to ensure the feasibility and effectiveness of the proposed regulatory initiatives and take into account the economic, social and environmental cost of both action and inaction, as well as environmental, human and animal health and effectively applying the ‘do no significant harm’ principle;

11. Calls on the Commission to analyse the implications for policies and measures of using a 20-year time horizon for global warming potential, as a complement to the 100-year timeframe currently used in accordance with the UNFCCC guidelines on greenhouse gas inventories; notes that more transparency about the short-term global warming implications of methane emissions would help to better inform EU climate policies; stresses that the use of such a complementary metric should by no means be used to delay necessary action to also drastically and rapidly reduce CO_2 emissions;

12. Calls on the Commission to include methane in the zero-pollution monitoring framework;

13. Points to the lack of global leadership on the mitigation of methane emissions, with very little action being taken on methane internationally; calls on the Commission to make methane emissions reduction a top priority in its climate diplomacy and to take action, notably through a UN-based pathway, within the framework of the EU's diplomatic and external relations in order to spearhead an international agreement on methane mitigation, promoting coordinated action to reduce methane emissions, as well as updating methane mitigation requirements;

14. Calls on the Commission to support the establishment of an independent international methane emissions observatory in partnership with the UNEP, the Climate and Clean Air Coalition and the International Energy Agency, which should be tasked with collecting, reconciling, verifying and publishing anthropogenic methane emissions data at a global level and developing a methane supply index; welcomes the fact that the Commission wishes to spearhead this initiative, including by mobilising funding; believes that independent, comparable, verifiable and transparent emissions data is key to acquiring knowledge about the size of the emissions problem and to combating the underestimation of the size and quantity of leaks; believes that such an observatory should look at methane emissions across all relevant sectors; stresses that the availability of detailed emissions data should lead to governments and regulators being able to enforce the polluter pays principle;

Energy

15. Welcomes the new EU Strategy for Energy System Integration[18];

16. Notes that almost 20 % of EU methane emissions derive from the energy sector, including oil and gas extraction, production, processing, transport, storage, transmission and distribution; acknowledges that imports account for over 80 % of the oil and gas consumed in the EU and that most methane emissions associated with oil and gas occur outside the EU; recognises that fossil fuels have no long-term role in the Union's energy mix and calls on the Member States, in cooperation with the Commission, to adopt national plans in order to phase out all fossil fuels as soon as possible in order to reach climate neutrality by 2050 at the latest, in tandem with a transition to a highly energy efficient and highly renewables-based energy system within the Union; believes that this should be linked to reviewing and updating the national energy and climate plans and that the Commission should evaluate these plans as part of the assessment stage;

17. Reiterates its call from its resolution of 9 June 2021 on the EU Biodiversity Strategy for 2030[19] urging the Member States – on the basis of the precautionary principle and the principle that preventive action should be taken, and taking into account the risks and the negative climate, environmental and biodiversity impacts involved in hydraulic fracturing for the extraction of unconventional hydrocarbons – not to authorise any new

[18] Commission communication of 8 July 2020 entitled 'Powering a climate-neutral economy: an EU Strategy for Energy System Integration (COM(2020)0299).
[19] Texts adopted, P9_TA(2021)0277.

hydraulic fracturing operations in the EU and to halt all existing operations;

18. Calls for a halt to EU support for the expansion of fossil fuel infrastructure; recalls that according to the International Energy Agency's last report on achieving net zero by 2050, there is no need for investment in new fossil fuel supplies under its net zero pathway, a conclusion shared by the Commission in its proposal for a regulation to amend the guidelines for trans-European energy infrastructure[20];

19. Notes that a significant number of gas wells that have ceased production continue to emit methane into the atmosphere; calls on the competent authorities to adopt policies to ensure that those wells, where ownership can be documented, are capped or filled to stop methane leakage and to ensure that those responsible for the leaks are paying the costs;

20. Notes that some non-EU countries have already introduced a ban on venting and flaring; calls on the Commission to propose legislation for the energy sector with binding rules on MRV, building on the methodology of the Oil and Gas Methane Partnership (OSGMP) Framework 2.0 and mandatory LDAR, including on imports, which should be built on best practices and applied right across the supply chain; believes, furthermore, that leak detection should be followed by sound recordkeeping and a requirement to repair potential leaks within a clear timeframe; welcomes the consideration of rules covering the whole supply chain to ban routine venting and flaring in the energy sector up until the point of production, except in exceptional cases necessary for safety reasons; considers that feedstock uses of fossil gas and oil, including for non-energy purposes such as to produce petrochemicals, should be included in such a proposal;

21. Notes that fossil gas and oil are used in the energy and petrochemical sectors and that both sectors therefore contribute to the methane emitted at fossil gas and oil well pads and processing plants; notes that according to the International Energy Agency, petrochemicals account for 8 % and 14 % of total primary demand for fossil gas and oil and that these shares are bound to increase; calls on the Commission to ensure that MRV and LDAR obligations and routine venting and flaring rules apply equally to fossil gas and oil used in the petrochemical sector;

22. Invites the Commission, when preparing its future legislation on methane emissions, to properly take into account that the investments undertaken by infrastructure operators to tackle methane leaks should be recognised within the scope of regulated activities as a signal of the importance of both safety and of sustainable activities, which might be incentivised by regulatory authorities;

23. Stresses that not only is the production and transportation of liquefied natural gas extremely inefficient owing to energy losses through liquefaction and cooling, it also adds disproportionately to methane emissions from the oil and gas sector; notes with concern the uptake of liquefied natural gas as a transport fuel in the shipping sector;

24. Acknowledges that imports comprise over four fifths of the oil and gas consumed in the

[20] Commission proposal for a regulation of 15 December 2020 on guidelines for trans-European energy infrastructure and repealing Regulation (EU) No 347/2013 (COM(2020)0824).

EU and that most methane emissions associated with oil and gas occur outside the EU, thereby contributing to significant methane emissions worldwide; calls on the Commission to make all fossil fuel imports into the Union conditional on their compliance with EU regulations on MRV and LDAR and the rules on venting and flaring, applicable to the entire fossil fuel supply chain, up to and including production; believes that a credible system has to be put in place to ensure that imports are compliant with EU requirements and that the Commission should therefore develop a robust independent methodology to assess the compliance of imports with EU requirements; stresses that these rules should enter into force as soon as possible, while paying due regard to energy security; calls on the Commission, moreover, to support the establishment and use of a third-party verification system in conjunction with other monitoring methods as a possible solution to verifying emissions data across the supply chain, including in relation to imports; supports, moreover, the establishment of an independently audited and globally applicable certification system that would provide a credible assessment of the methane emissions performance of all fossil gas production around the world; believes that this certification should be audited and verified by an independent third party and based on a uniform approach to measurement based on detailed information from the relevant facilities, assets and countries;

25. Calls on the Commission to adopt specific measures to identify and address methane leaks from super-emitters in all sectors, and not limited to the energy sector, including through the use of the international methane emissions observatory;

26. Stresses the importance of the Copernicus programme and its Atmosphere Monitoring Service in detecting and monitoring global super-emitters, as well as smaller scale sources;

27. Underlines that aerial monitoring is equally key in targeting venting, flaring and leak detection; highlights that satellite data allows independent verification of a company's footprint and facilitates engagement on mitigation; strongly supports the sharing of information and technologies among stakeholders in the Union and at global level, and with the public, in order to act as a catalyst for abatement efforts;

28. Welcomes the Commission's initiatives on the mitigation of methane from coal mines, including closed and abandoned sites; expresses its strong support for mandatory MRV and LDAR for coal mine methane emissions, including the requirement for companies that own closed sites or Member States (for abandoned mines where no existing owner is liable) to effectively close and seal all abandoned sites in the EU as soon as possible and to adopt the same MRV and LDAR measures as for operating sites; appeals to the Commission to take appropriate action to ensure that Member States address the ownership of abandoned sites and support coal mine methane mitigation; calls on the Commission to adopt measurement equipment standards and impose a measuring requirement for all mines; stresses that the European Pollutant Release and Transfer Register should follow the new reporting to ensure policy coherence;

29. Stresses the importance of clean-up works aimed at preventing and eventually eliminating methane emissions from closed sites; calls on the Commission to develop a specific programme to address methane emissions from closed and abandoned coal mines by providing incentives to former coal mines to address their methane emissions,

without this leading to the promotion of benefits or neglect of the responsibilities of the owners responsible for their sealing, in line with the polluter pays principle, as enshrined in Article 191(2) of the Treaty on the Functioning of the European Union, and to support the just transition of coal regions in developing alternative activities which are in line with the objective of climate neutrality by 2050; calls on the Commission and the Member States, moreover, to consider a specific programme or other actions, including financial support on MRV and emissions mitigation in abandoned oil and gas sites without known ownership, while having full regard for the polluter pays principle; highlights the importance of adequate decommissioning of such infrastructure;

Agriculture

30. Expresses its concern that agriculture represents the largest share of anthropogenic methane emission sources in the EU; underlines, however, that the EU's greenhouse gas emissions from European agriculture (including livestock) saw a reduction of 22.2 % between 1990 and 2018 in the EU-28, due to a reduction in agricultural emissions of methane by 21 % (enteric fermentation by 22 % and manure management by 17 %); notes, however, that there has been a slight increase in methane emissions in the last five years due to increased herd sizes; notes that although agriculture offers the second-highest overall methane-emission reduction potential of any sector, as demonstrated in the Commission communication on the EU Methane Strategy, its methane-emission sources can be diffuse and therefore potentially challenging to monitor, report and verify; notes, however, that the existing monitoring system based on Tier 2 methodology allows action to be taken; stresses that methane emissions in agriculture are primarily driven by livestock numbers, particularly ruminants; calls on the Member States to introduce effective and sustainable measures to address those emissions in their national strategic plans and calls on the Commission to analyse these thoroughly before approving the plans with the aim of ensuring policy coherence; stresses that tightening the framework conditions for methane emissions in the agricultural sector, in particular the livestock sector, should not entail production being shifted abroad;

31. Points out that in agriculture a significant share of global methane emissions originates from outside the EU and calls on the Commission to ensure that food continues to be produced in the most environmentally sustainable locations; emphasises the need for the EU to take the lead in exchanges of best practices with its third countries' trading partners with the aim of reducing methane emissions from agriculture; stresses the importance of international cooperation for reducing methane emissions;

32. Welcomes the Commission's objective on multilateral engagement and supports active cooperation with international partners in the framework of the UNFCCC Koronivia Joint Work on Agriculture and the Climate and Clean Air Coalition, which provide essential multilateral platforms to exchange best practices and to encourage our global partners to reduce methane-emitting agricultural production and to support their sustainable transition;

33. Recalls that a significant amount of methane emission in the agri-food sector is due to imports; calls for the EU to promote best practices with its trading partners by asking them to implement similar rules to those applicable to EU producers;

34. Calls on the Commission to estimate the contribution of imported agri-food products to EU anthropogenic methane emissions through the EDGAR-FOOD database;

35. Stresses that future policy decisions need to provide a clear framework for the livestock sector to ensure a degree of predictability;

36. Welcomes the Commission's study on the status of new genomic techniques and strongly supports the finding that these techniques have the potential to contribute to a more sustainable food system; highlights also that the study puts forward opportunities and benefits for the livestock sector; calls for the legal framework for these biotechnologies to be adapted to the latest scientific and technological developments;

37. Notes that while extensive livestock production may result in lower methane emissions from farms, it increases the emissions per unit of product produced; calls on the Commission and the Member States to take into account the effects of mitigation strategies on global methane emissions;

38. Emphasises the importance of agriculture in capturing and storing carbon; notes the important role of a wider circular economy and that the uptake of progressive CO_2 emissions removal and the increased circularity of carbon should be incentivised, while avoiding additional pressure on the price of agricultural land, which would be to the detriment of young farmers; urges that any measures taken must not hamper the EU's competitiveness;

39. Calls on the Commission, in accordance with the European Climate Law, to explore the development of a regulatory framework for the certification of carbon removals on the basis of robust and transparent carbon accounting that takes into account the differences between greenhouse gases, and to verify the authenticity of carbon removals and reward farmers for their mitigation efforts;

40. Welcomes the Commission's announcement of the establishment of an expert group with the aim of analysing the life cycle methane emissions matrix;

41. Urges the Commission to support Member States in the collection of data regarding the carbon sequestration potential of grassland in order to allow for a more targeted approach to climate policy;

42. Acknowledges that animal production is the key activity on permanent grassland, allowing for the survival, economic stability and existence of rural farms in hill and mountain regions, thus preventing the overgrowth of such areas; calls on the Commission to focus investment efforts on funding innovation in methane inhibitors, including those for pasture-based systems, and to collaborate with third countries involved in similar research;

43. Notes the methane emissions generated from rewetted peatlands; underlines the fact that according to research, however, the warming effect reaches a plateau after rewetting because of the break in CO_2/N2O emissions from rewetted peatlands and the short atmospheric lifetime of any methane that is emitted[21]; highlights that this is not the case

[21] Günther, A., Barthelmes, A., Huth, V., Joosten, H., Jurasinski, G., Kobesch, F. and Couwenberg, J., 'Prompt

for the continued CO_2 emissions from drained peatlands, which causes further warming; calls for peatlands to be rewetted without delay in order to ensure the most beneficial cooling effects;

44. Notes that according to the Farm to Fork Strategy, most Europeans' diets are not in line with recommendations on healthy eating, and that a population-wide shift in consumption patterns is needed towards more healthy foods, diets and lifestyles, including increased consumption of sustainably produced plants and plant-based foods, such as fresh fruits and vegetables, whole grains and legumes, and to address the overconsumption of meat and ultra-processed products, which will also benefit the environment, i.e. through reduced methane emissions and animal welfare, and secure a more resilient economy; emphasises that EU-wide science-based recommendations, including clear objectives, for sustainable, healthy and more balanced diets, taking into account the cultural and regional diversity of European foods and diets as well as consumers' needs, would help and encourage consumers and inform Member States' own efforts to integrate sustainability elements in national dietary advice; calls on the Commission to develop such recommendations and specific actions to effectively promote healthy, sustainable and more balanced diets;

45. Stresses that technologies and practices to limit methane emissions from agriculture, including sustainable livestock management practices, are developing at a fast pace and should be advanced and implemented as soon as possible; calls on the Commission to ensure that proven effective and cost-efficient innovations that mitigate methane measures in agricultural production are quickly implemented in the EU and that those already available are utilised by EU producers in order to continue to reduce methane emissions within the framework of the common agricultural policy (CAP) and the national strategic plans, including through specific, dedicated eco-schemes and carbon farming initiatives under the CAP and through other private or public funding streams; believes that farmers should receive financial incentives to adopt mitigation practices through the Horizon Europe programme and Economic Resilience Initiative Funds; recognises, however, that famers are unlikely to solve the emissions problems associated with animal agricultural production on their own; notes that structural differences in agriculture between the Member States and national specificities will affect the cost of taking up these techniques;

46. Highlights that there are already well demonstrated practices in place to help reduce emissions from manure management; notes that these practices also reduce the level of ammonia released by the agriculture sector; calls on the Commission to propose regulatory measures to ensure the uptake of these techniques, with realistic and ambitious targets and timelines; stresses, furthermore, that nitrogen-based fertilisers are responsible for a large amount of methane emissions; calls on the Commission to take appropriate action to reduce associated emissions as part of the Farm to Fork Strategy;

47. Underlines the key role that the EU should play in supporting research, innovation and development, as well as in scaling up new sustainable technologies and practices to help reduce methane emissions from all sectors including livestock agriculture, including by improving MRV of methane emissions in the sector in order to track progress towards

---

rewetting of drained peatlands reduces climate warming despite methane emissions', *Nature Communications*, 11, 1644 (2020).

these targets and by applying technologies that are already available, such as MRV-related technologies; believes that methane mitigation measures should be developed for grazing animals so as to respect animal health and welfare and in line with the precautionary principle; points, in particular, to the need for multigenerational studies on feed additives and calls on the Commission to ensure the timely revision of the Feed Additives Regulation[22];

48. Considers that the use of agricultural waste and residues for biogas production can be a driver for the circular economy and stresses the value-added use of agricultural residues, provided that the cascading use principle is adhered to and the appropriate sustainability criteria are applied; points out that biogas production from agricultural residues and other organic waste can reduce methane emissions in the agricultural sector and incentivise the 'prosumer' (producer and consumer) model; calls for better coordination and improved infrastructure between farmers and renewable energy producers in order to enable the uptake of locally connected production of sustainable biogas and considers that the CAP should incentivise the mitigation and reduction of methane emissions and support measures in this regard; calls on the Commission, accordingly, to ensure full coherence between the European Climate Law, the CAP and the Methane Strategy;

49. Welcomes the Methane Strategy's acknowledgement that biogas derived from food or feed crops increases methane emissions and can therefore undermine any mitigation benefits, and that biogas developments should be based primarily on waste or residues; calls on the Commission to develop a robust, independent certification of origin scheme for biogas production methods and feedstock; stresses that biogas production should be based on a local, circular economy model to avoid transport-related emissions and costs; emphasises that no support should incentivise the intensification of livestock agriculture;

50. Notes that the development of the circular and bio-economy can create more jobs in primary production and stresses that the bio-economy requires new skills, new knowledge and new disciplines to be developed and/or integrated further in training and education in this sector in order to tackle bio-economy-related societal changes, promote competitiveness, growth and job creation, meet the needs of the sector and ensure that skills and jobs are better matched;

Waste

51. Calls on the Commission to further analyse methane emissions from sludge and waste water and to revise the Sewage Sludge Directive[23] and Urban Waste Water Treatment Directive[24] in 2022, which should also address air pollutant and greenhouse gas emissions, notably methane; calls on the Commission, furthermore, to be ambitious and to integrate a strong focus on methane emissions in the 2024 review of the Landfill Directive[25] and the upcoming revision of the IED; highlights the need for measures to

[22] Regulation (EC) No 1831/2003 of the European Parliament and of the Council of 22 September 2003 on additives for use in animal nutrition, OJ L 268, 18.10.2003, p. 29.
[23] Council Directive 86/278/EEC of 12 June 1986 on the protection of the environment, and in particular of the soil, when sewage sludge is used in agriculture, OJ L 181, 4.7.1986, p. 6.
[24] Council Directive 91/271/EEC of 21 May 1991 concerning urban waste-water treatment, OJ L 135, 30.5.1991, p. 40.
[25] Council Directive 1999/31/EC of 26 April 1999 on the landfill of waste, OJ L 182, 16.7.1999, p. 1.

require landfill sites to use the bio-methane they produce until its energy content drops below a useful value and, once it is no longer viable to use the bio-methane produced at a landfill site, for the use of bio-oxidation and other technologies in hot spots in order to reduce the remaining methane emissions; recalls, in this regard, that methane emissions from the waste sector partly originate from leaks from biogas plants; calls on the Commission to publish guidelines on the best methods to build and operate biogas plants to address leaks due to poor maintenance, operation and design; further recalls that the IED has successively contributed to reducing pollution from industrial activities; highlights, however, that landfill disposal is not covered by any best available techniques reference documents (BREFs);

52. Underlines that landfill disposal, which sits at the bottom of the waste hierarchy, is the most polluting way to manage waste both in terms of greenhouse gas emissions and other pollutants to air, soil and water; calls on the Member States to fully comply with the existing requirements of the Landfill Directive and calls for the directive to be aligned with the overarching principles of the Circular Economy Action Plan, including the objective for 2016, by which date the amount of biodegradable waste landfilled was to be reduced to 35 % or less compared to 1995 levels; calls on the Commission to develop a comprehensive strategy to ensure that Member States that are not in compliance with that target take corrective measures and actions; calls on the Commission to support Member States in their efforts to move away from landfills; expresses its concern, moreover, that in 2017 15 Member States were not fully meeting the obligation laid down in the directive to treat waste before landfilling; reiterates, in this regard, its call from its resolution of 10 February 2021 on the new Circular Economy Action Plan to bring the Landfill Directive into line with the overarching principles of the Circular Economy Action Plan and to focus the future revision of the relevant directives on prevention and capping residual waste generation, and to improve the 10 % landfill target by defining a landfill cap in kg/person/year in order to deliver the best environmental results from the combined effects of reduction, reuse, recycling and composting, while minimising landfilling of residuals; considers, furthermore, that a key improvement would be to ensure that the methodology for accounting for greenhouse gases from landfills is more robust and harmonised across the EU;

53. Calls on the Commission, in the light of the above:

– to set binding EU targets for commercial and industrial waste, as there are still no specific targets on this;

– to propose targets to cap the generation of residual waste in the planned review of the Waste Framework Directive[26] and Landfill Directive in 2024;

– to align the Landfill Directive with the EU's overall climate change and greenhouse gas emissions reduction objectives, following an in-depth analysis to better address greenhouse gas-related issues;

– to produce a BREF document for landfilling, including provisions on methane;

[26] Directive 2008/98/EC of the European Parliament and of the Council of 19 November 2008 on waste and repealing certain Directives, OJ L 312, 22.11.2008, p. 3.

54. Calls on the Commission to monitor the Member States' progress regarding the separate collection of bio-waste, a rule due to be implemented by 2023; recalls that in accordance with the hierarchy of waste treatment, Member States are legally required to take measures to encourage the recycling of bio-waste, which include composting and digestion of bio-waste, bearing in mind that bio-waste is usually collected and treated at a local level; stresses, therefore, that the Commission should encourage further cooperation between the regions and the Member States and harmonisation through the exchange of best practices;

55. Reiterates the new Circular Economy Action Plan's objectives of achieving significant circularity and avoiding greenhouse gases, in particular methane emissions from escaping the closed loop; understands that genuinely integrated waste management should be promoted to successfully implement the waste hierarchy and to give greater priority to the treatment of waste;

56. Emphasises that closure and after-care procedures for landfill cells are key to reducing leakages, taking into account the entire life cycle of landfill sites; calls on the Commission to provide support suited to the conditions of each Member State in order to ensure full application of the waste hierarchy, emphasising waste prevention, the achievement of the 31 December 2023 target for source separation and separate collection of bio-waste, including by encouraging cooperation between the public and private sectors to secure a high degree of separate collection, recycling and recovery of biodegradable waste, so as to ensure efficient diversion from landfill without providing EU funding for incineration; highlights that there should always be a feasible biological treatment option, such as composting or anaerobic digestion; acknowledges, in this regard, the potential of anaerobic digestion from biodegradable waste, which allows the production of bio-methane; stresses, in line with the waste hierarchy, that incineration is only at the second lowest step in the waste hierarchy and recalls its positions on incineration set out in its resolution of 10 February 2021 on the New Circular Economy Action Plan;

57. Highlights that reservoir surfaces are a globally significant source of greenhouse gas emissions, including methane owing mainly to sediment accumulation in impoundments, and that dam removal can help to significantly reduce emissions from impounded areas; calls on the European Environment Agency to collect information on this subject in order to inform the assessment of potential policy measures;

°

° °

58. Instructs its President to forward this resolution to the Council and the Commission.

EXPLANATORY STATEMENT

Methane is the second biggest contributor to climate change, after carbon dioxide (CO2), accounting in Europe for 10% of total greenhouse gas emissions. Methane is more powerful than carbon dioxide and it contributes to ozone formation in the lower atmosphere, which is a potent local air pollutant that causes serious health problems. Reducing methane emissions therefore contributes to both slowing down climate change and improving air quality.

The EU already has a greenhouse gas emissions reduction targets for 2030 for all greenhouse gases, with human-made methane emissions covered by binding national emission reduction targets under the Effort Sharing Regulation (ESR). By June 2021, this Regulation will be reviewed as part of the implementation of the increased emissions reductions target for 2030. Stepping up the level of ambition for reductions in greenhouse-gas emissions to at least 55% by 2030 would also require an accelerated effort to tackle methane emissions, with projections indicating a step up to 35-37%, methane emission reductions are needed. Policy action to reduce methane emissions will contribute to both the EU's decarbonisation efforts towards the higher 2030 ambition, climate neutrality by 2050 and the EU's zero-pollution ambition for a toxic-free environment.

On 14 October 2020, the Commission has published the EU strategy to reduce methane emissions with a focus on addressing anthropogenic methane emissions, i.e. emissions associated with human activity. The strategy identifies cross-sectoral actions as well as specific actions in sectors, such as the energy sector, the agriculture sector and the waste sectors, which are responsible respectively for 19%, 53% and 26% of anthropogenic methane emissions in the EU. The EU can play an important role in ensuring methane emission reductions at global level. In particular, the strategy includes several international actions, such as stepping-up the EU contribution to the work of international fora, such as through the Climate and Clean Air Coalition (CCAC), the Arctic Council and the Association of Southeast Asian Nations (ASEAN) in order to address methane emission reductions in all relevant sectors with partner countries.

The Strategy includes, *inter alia,* the following actions across all sectors:

- improvements in measurement, reporting and verification (MRV) of methane emissions by companies across all relevant sectors, including through sector-specific initiatives

- the establishment of an independent international methane emissions observatory anchored in the United Nations framework, in cooperation with international partners, to collect, reconcile, verify and publish anthropogenic methane emissions data at a global level

- strengthened satellite-based detection and monitoring of methane emissions through the EU’s Copernicus programme for detecting and monitoring global super-emitters

- reviewing relevant EU climate and environmental legislation to more effectively address methane-related emissions notably the Industrial Emissions Directive and the European Pollutant Release and Transfer Register

- providing targeted support to accelerate the development of the market for biogas from sustainable sources, including the future gas market regulatory framework, the upcoming revision of the Renewable Energy Directive and a pilot project to support rural areas and farming communities in building biogas projects and accessing funds for biogas production from agricultural waste

In the energy sector, the strategy includes, *inter alia,* legislative proposals in 2021 on compulsory MRV for all energy-related methane emissions and on an obligation to improve leak detection and repair (LDAR) of leaks on all fossil gas infrastructure. It also considers legislation on eliminating routine venting and flaring in the energy sector covering the full supply chain, up to the point of production.

In the agriculture sector, it includes, among others, the setting up of an expert group to analyse life-cycle methane emissions by looking at livestock, manure and feed management, feed characteristics, new technologies and practices. Moreover, it proposes to develop, by the end of 2021, an inventory of best practices and available technologies to explore and promote the wider uptake of innovative mitigating actions and technologies through the wider deployment of 'carbon farming' in Member States and their Common Agricultural Policy Strategic Plans.

Finally, in the waste sector, the strategy includes initiatives to tackle unlawful practices and provide technical assistance to Member States and regions, with a view to addressing sub-standard landfills, and to help Member States and regions to stabilise biodegradable waste prior to disposal and divert this waste to biogas production. Moreover, in the review of the Landfill Directive in 2024, the strategy proposes to consider further action to improve the management of landfill gas, minimise its harmful climate effects, and harness any of its potential energy gains.

Importance of EU Action across the supply chain

The EU Strategy to Reduce Methane Emissions highlights that the external carbon or methane emissions associated with EU fossil gas and oil consumption (i.e. the emissions released outside the EU to produce and deliver fossil gas to the EU) are between three to eight times the quantity of emissions occurring within the EU, for gas possibly even higher for oil.

Ms Spyraki therefore considers that the EU therefore plays an outsized role in driving global methane emissions, importing oil and gas after most methane emissions have been released. The EU must ensure supply-chain coverage of its MRV, LDAR and BRVF obligations as both are necessary to respond to the climate emergency as well as to ensure a level playing field for EU producers of oil and gas.

Measurement, Reporting and Verification (MRV)

A strong, independent, and scientifically rigorous MRV system is central to address methane emissions. It is necessary to provide credible data, identify issues and efficient measures, and assess the progresses achieved. The low bias and inaccurate MRV hamper the adoption and implementation of efficient measures to tackle the environmental and health impact of this powerful greenhouse gas. A mandatory MRV system would also improve Member States' reporting to the United Nations Framework Convention on Climate Change (UNFCC), supporting international effort on methane emissions assessment and mitigation.

A robust MRV framework requires the EU to move away from voluntary approaches and to adopt binding harmonised requirements. While the three-level system of the Oil and Gas Methane Partnership (OGMP) 2.0 framework has achieved tangible improvements on reporting requirements, it also has gaps. For example, it does not list precise measurement technologies and limits itself, for the highest reporting levels, to general approaches for measurement. The Commission should therefore progressively go further in its MRV standards.

Methane emissions are a global issue and tackling their impact on climate would require international cooperation, knowledge-building, and best-practices sharing. Given the fast development of monitoring and reporting technologies, the Observatory could be a key institution in identifying and spreading innovations for MRV.

Leak Detection and Repair (LDAR)

A strong LDAR program is a critical element of the EU's strategy to reduce methane emissions and achieve the EU climate and environment goals. The scope should cover the full supply chain of fossil gas, oil and coal, and should also include biogas and biomethane to ensure that all methane leaks from the energy sector are covered. It should be flexible enough to quickly adapt and capitalise on the upcoming innovative technologies expected to deliver environment benefits and/or cost reduction, such as alternatives technologies sensing methane and mounted on mobile platforms like trucks, drones, and planes.

Performance Standards, Benchmarks and Emission Limits

The Commission has recognized that the EU can play an important role in ensuring reduction in global methane emission by using its position as the largest global importer of fossil fuels. Apart from Norway, which already has stringent regulations in place to deal with methane, few commitments have been made so far regarding the reduction of upstream methane emissions in the major source countries of EU's gas imports. The EU should therefore demonstrate its commitment to reducing its global methane footprint by exploring binding methane performance standards on all gas sold on the EU market.

Abandoned and Unused Oil and Gas Wells

Europe counts many abandoned wells still potentially emitting methane. A separate program on MRV and mitigation of abandoned wells would allow for finding, sealing, and monitoring them, leading to substantial reductions in methane emissions as well as employment opportunities in the remediation and monitoring of the wells. For this programme, the EU should take into consideration the diversity of ways in which wells are decommissioned and the lack of identifiable ownership that can result from it. Providing funding for the monitoring and capping of wells without legal ownership will be needed.

International Action

Methane emissions are a global issue and their mitigation will consequently require global efforts and commitments. As the largest importer of natural gas in the world and one of the largest importers of oil, the EU is in a position to take the lead on international standards and to support the global implementation of strong MRV and LDAR. The Commission study if

upcoming MRV and LDAR legislation should apply to all gas sold or consumed in Europe through requirements on methane emissions from any imported gas or oil to spread mitigation globally and ensure a level-playing field between EU and third-countries' companies.

Coal Mine Methane

Measuring apparatus is already in place in most of the coal mines. However, since the measurement is only for the safety purposes, it may not represent the true scale of the emissions as the measuring apparatus may not be precise enough to quantify the entirety of low-concentration emissions from the ventilation shafts.

Abandoned and Unused Coal Mines

Studies show that closed and abandoned sites emit methane even after mining is ceased. As coal phase-out is inevitable, the Methane Strategy should pay particular attention to abandoned and closed sites to ensure that these emissions are accounted for and mitigated wherever technically possible.

Agriculture

There are inherent difficulties in accurately monitoring, verifying and reporting the methane emissions from the agriculture sector, however, measures can be adopted to limit methane emissions before the implementation of a precise MRV system.

By the end of 2021, the EU should – in cooperation with sectoral experts and Member States – develop an inventory of best practices and available technologies to explore and promote the wider uptake of innovative mitigating actions. These actions should have a special focus on methane from enteric fermentation.

Waste

The EU should continue to tackle unlawful practices and provide technical assistance to Member States and regions. This assistance will address issues such as sub-standard landfills. The EU will also help Member States and regions to stabilise biodegradable waste prior to disposal and to increase its use for the production of climate-neutral, circular and bio-based materials and chemicals, and to divert this waste to biogas production.

In the review of the Landfill Directive in 2024, the EU should consider further action to improve the management of landfill gas, minimise its harmful climate effects, and harness any of its potential energy gains.

ANNEX: LIST OF ENTITIES OR PERSONS FROM WHOM THE RAPPORTEUR HAS RECEIVED INPUT

The following list is drawn up on a purely voluntary basis under the exclusive responsibility of the rapporteur. The rapporteur has received input from the following entities or persons in the preparation of the report, until the adoption thereof in committee:

Entity and/or person
1. Environmental Defence
2. Copa Cogeca
3. Equinor
4. European Waste Management Association (FEAD)
5. Fortum Oslo Varme
6. European Environmental Bureau
7. Syctom
8. MIQ Methane Intelligence
9. European Biogas Association (EBA)
10. Aristotle University of Thessaloniki
11. Helector
12. Honeywell
13. IOGP
14. Smiths Group PLC
15. International Energy Agency
16. Eurogas
17. Motor Oil
18. Clean Air Task Force
19. Veolia Environnement S.A
20. International Energy Agency
21. DESFA
22. Client Earth
23. Environnemental Investigation Agency
24. DSM

16.7.2021

OPINION OF THE COMMITTEE ON INDUSTRY, RESEARCH AND ENERGY

for the Committee on the Environment, Public Health and Food Safety

on an EU strategy to reduce methane emissions
(2021/2006(INI))

Rapporteur for opinion (*): Cristian-Silviu Buşoi

(*) Associated committee – Rule 57 of the Rules of Procedure

SUGGESTIONS

The Committee on Industry, Research and Energy calls on the Committee on the Environment, Public Health and Food Safety, as the committee responsible, to incorporate the following suggestions into its motion for a resolution:

A. whereas methane emissions are the second-largest cause of global warming, with approximately one third of global anthropogenic methane emissions coming from the energy sector;

B. whereas the concentration of methane in the atmosphere is currently approximately two-and-a-half times higher than pre-industrial levels and is constantly increasing; whereas according to the ‘Global Methane Assessment’ of the UN Environment Programme (UNEP), published in 2021 ‘reducing human-caused methane emissions is one of the most cost-effective strategies to rapidly reduce the rate of warming and contribute significantly to global efforts to limit temperature rise to 1.5°C’;

C. whereas the energy transition towards reaching climate neutrality by 2050 at the latest will require a substantial reduction in greenhouse gas (GHG) emissions from the energy sector, including in methane emissions; whereas the impact assessment of the 2030 Climate Target Plan[27] indicates that the target of at least 55 % GHG emissions reduction by 2030 requires tackling methane emissions; whereas the International Energy Agency indicates in its report entitled ‘Net Zero by 2050: A Roadmap for the Global Energy Sector’ that methane emissions from fossil fuels should be reduced by 75 % between 2020 to 2030 in the Net-Zero Emissions Scenario; whereas 15 % of the emissions cuts required by the Paris Agreement could already be eliminated with low-cost and technically feasible methane mitigation;

D. whereas a large number of the most cost-effective methane emission savings can be

[27] SWD(2020)0176.

achieved in the energy sector; whereas according to the UNEP report, methane emissions can be reduced by 45 % by the end of this decade and rapid and significant reductions in methane emissions are possible using existing technologies and at a very low cost; whereas the International Energy Agency's Methane Tracker estimates that around 40 % of energy-related methane emissions can be abated at no-net cost, mainly by fixing methane leaks and eliminating vents in the fossil fuel sector;

E. whereas the biggest sources of anthropogenic methane emissions in the EU are the gas and oil sectors (19 %), the waste sector (26 %) and agriculture (53 %);

F. whereas the EU is the largest importer of oil and gas; whereas the EU imports up to 85 % of gas, and the methane footprint of the gas produced in supplier countries is estimated to be between three and eight times larger than the methane emissions generated within the Union;

G. whereas the intensity of methane emissions in the EU varies widely according to the degree of dependency on fossil fuel sources in the energy mix; whereas gas is only of a transitional nature taking into account the EU's dependency on third countries for its energy supply;

H. whereas its Directorate-General for Parliamentary Research Services[28] has noted the fact that methane emissions come from a wide range of sectors, namely agriculture, waste and energy, and that, once in the atmosphere, methane blends well with other gases, making it difficult to measure and report it; whereas uncertainty about methane emissions data is typically much higher compared to CO_2 emissions when excluding forest and other land-use-related emissions; whereas recent studies[29] have estimated that global anthropogenic fossil methane emissions are underestimated by about 25 to 40 %;

I. whereas fugitive emissions from leaking equipment, infrastructure or closed and abandoned sites, as well as emissions from venting and the incomplete combustion of methane, represent the majority of methane emissions in the energy sector;

J. whereas EU legislation that helps to provide information on methane emissions already exists, including Regulation (EC) No 166/2006 on the E-PRTR[30] and Directive 2010/75/EU on industrial emissions[31], but there is currently no policy in the EU that is aimed specifically at reducing methane emissions;

K. whereas the improvement and implementation of fit-for-purpose and appropriately targeted technologies and practices to improve monitoring, reporting and verification (MRV) and to mitigate emissions are at the backbone of the effective reduction of

---

[28] https://www.europarl.europa.eu/legislative-train/theme-a-european-green-deal/file-reducing-methane-emissions-in-the-energy-sector/05-2021

[29] Hmiel, B., Petrenko, V.V., Dyonisius, M.N. *et al, Preindustrial $^{14}CH_4$ indicates greater anthropogenic fossil CH_4 emissions*, *Nature*, Vol. 578, 2020, pp. 409–412, among others, available at: https://www.nature.com/articles/s41586-020-1991-8

[30] Regulation (EC) No 166/2006 of the European Parliament and of the Council of 18 January 2006 concerning the establishment of a European Pollutant Release and Transfer Register and amending Council Directives 91/689/EEC and 96/61/EC, OJ L 33, 4.2.2006, p. 1.

[31] Directive 2010/75/EU of the European Parliament and of the Council of 24 November 2010 on industrial emissions (integrated pollution prevention and control), OJ L 334, 17.12.2010, p. 17.

methane emissions;

1. Highlights the importance of rapid reductions in methane emissions as one of the most effective measures for EU climate action; notes that methane emission reductions complement the necessary reductions in carbon dioxide emissions; highlights that methane reduction brings considerable benefits not only in terms of reduced climate impacts but also from improved air quality, as methane also contributes to tropospheric ozone formation, a potent local air pollutant that causes serious health problems;

2. Agrees that an increased ambition of a GHG emission reduction of at least 55 % by 2030 will need additional efforts to address all GHGs; underlines that these efforts will mean that more investments in technologies related to MRV and leak detection and repair (LDAR) will be necessary;

3. Calls for an EU strategy to reduce methane emissions; supports a clear pathway and legislative framework to mitigate methane emissions in a comprehensive fashion across Europe and internationally by fostering synergies between sectors to strengthen the business case for capturing, which has commercial value and could be monetised directly, and avoiding methane emissions, in order to contribute to achieving the EU decarbonisation objectives; welcomes the consideration of legislation on targets and standards to reduce methane emissions from the fossil fuels consumed, including imports; supports the design and deployment of appropriate and cost-effective methane mitigation tools that enable industry, across different parts of the value chain, to achieve performance standards in an optimal way;

4. Highlights the necessity to decarbonise the gas sector in order to achieve climate neutrality by 2050 at the latest; takes note of the role of fossil gas in meeting today's global energy demand and stresses that the part it plays in the energy transition as only a transitional source will also depend on the successful reduction of related methane emissions;

5. Acknowledges the work done so far by the gas industry to reduce methane emissions through voluntary initiatives, such as the Oil and Gas Climate Initiative, the Methane Guiding Principles and the Oil and Gas Methane Partnership (OGMP 2.0), and underlines the commitment shown to undertake even stronger steps to further mitigate methane emissions along the entire gas value chain;

6. Welcomes the preparation of legislation for the energy sector with binding rules on MRV, building on the OGMP 2.0 methodology and mandatory LDAR, including on imports, building on best practices and applied across the full supply chain, as well as the consideration of rules banning routine venting and flaring in the energy sector, covering the full supply chain, up to the point of production, except in exceptional cases necessary for safety reasons; insists that this ban should also apply to imports and that the Commission should therefore develop a strong independent methodology to assess the compliance of imports with the EU requirements;

7. Underlines that a well-structured, fit-for-purpose MRV system, as adequately outlined by the strategy, including on imports, with the aim of ensuring that all methane leaks are covered, a level playing field has been accomplished, the reduction of methane-intensive imports promoted and carbon leakage avoided, and which also avoids

duplication of Union and national reporting obligations, will be core to more accurate detection and to quantifying methane emissions along the value chains and will allow better evaluation of the results of the mitigation measures in place; stresses that the EU should take the lead in international cooperation in gathering data, reporting and promoting policies and technological solutions for further reducing and eliminating methane emissions;

8. Considers that an accurate MRV system must rely on detailed reports, a detailed study of equipment and the application of the most updated emission factors throughout the supply chain; notes that rules on MRV should take account of the specificities of each sector; stresses that reporting data on methane emissions should be public or, in the case of sensitive information, available to the competent authorities and independent verifiers; calls on the Commission to develop a third-party verification system to assess and verify the emissions data across the whole supply chain;

9. Calls on the Commission to adopt specific measures to address the methane leaks from super-emitters, including the petrochemical sector;

10. Believes that research, development and innovation, and the rapid implementation of fit-for-purpose technologies and best available practices to improve MRV, LDAR, venting and flaring, and to mitigate methane emissions in all sectors are at the backbone of effective action; supports the mobilisation of funding from Horizon Europe, including technology solutions for the sustainable production of biomethane, and for establishing an international methane emissions observatory; underlines that the costs of pollution should not be passed on to the citizens in line with the polluter pays principle;

11. Stresses the importance of the Copernicus programme and its Atmosphere Monitoring Service in detecting and monitoring global super-emitters, as well as smaller scale sources; underlines that aerial monitoring is equally key in targeting venting, flaring and leak detection; highlights that satellite data allows independent verification of a company’s footprint and facilitates engagement on mitigation; strongly supports the sharing of information and technologies among stakeholders in the Union and at global level, and with the public, in order to act as a catalyst for abatement efforts; believes that independent, comparable, verifiable and transparent emissions data is key to acquiring knowledge about the size of the emissions problem and to combat the underestimation of the size and quantity of leaks also from imported fossil fuels;

12. Calls on the Commission to continue a close dialogue with regulators, as outlined in the Commission’s methane strategy;

13. Calls for a thorough assessment of the cost efficiency of the actions proposed in the energy sector, including their social and environmental benefits, as a priority, which should take account of local conditions and the specific aspects of the various parts of the value chain and provide the necessary flexibility to the industry for their implementation without undermining GHG reduction targets; calls on the Commission to consider a compulsory framework on LDAR across the whole supply chain, imports included, enabling industry, across different parts of the value chain, to achieve performance standards in an optimal and cost-efficient way, with the aim of ensuring that all methane leaks are covered, a level playing field is accomplished, the reduction

of methane-intensive imports promoted and carbon leakage avoided;

14. Invites the Commission, when preparing its future legislation on methane emissions, to properly take into account that the investments undertaken by infrastructure operators to tackle methane leaks should be recognised within the scope of regulated activities as a signal of the importance of both safety and of sustainable activities, which might be incentivised by regulatory authorities;

15. Calls for a reinforced measurement of methane emissions in coal mines, promoting good practices and disseminating best available technologies and regulatory and fiscal frameworks also in order to foster the development of commercial collection, facilitating the utilisation of methane from abandoned sites; calls on the Commission to develop a specific programme to address methane emissions from abandoned, closed coal mines and oil and gas wells by providing incentives to former coal mines to address their methane emissions, without this leading to the promotion of benefits or neglect of the responsibilities of the owners responsible for their sealing, in line with the polluter pays principle, as enshrined in Article 191(2) of the Treaty on the Functioning of the European Union, and to support the just transition of coal regions in developing alternative activities which are in line with the objective of climate neutrality by 2050;

16. Welcomes the new EU Strategy for Energy System Integration[32] and its proposals to achieve a more circular energy system through the sustainable use of unavoidable waste and residues for biogas and biomethane production; calls on the Commission and the Member States to fully consider circularity first, which means less waste, reducing the consumption of resources and energy, and implementing long-term waste prevention solutions when promoting the development of biogas and biomethane; calls on the Commission to consider ways to facilitate the development of sustainable biogas and biomethane, while effectively reducing methane emissions, and ensure the deployment of the most cost-efficient solutions across the Member States, exploiting synergies between sectors and avoiding perverse incentives that could lead to an overall increase in emissions;

17. Welcomes the consideration of legislation on possible targets, standards or other incentives in relation to the fossil fuel energy consumed and imported into the EU; calls on the Commission to make all fossil fuel imports into the Union conditional on their compliance with EU regulations on MRV, LDAR and the rules on venting and flaring, applicable to the entire fossil fuels supply chain, up to and including production;

18. Recalls that the Union is the world's biggest importer of fossil gas, with three quarters of the gas and 90 % of the oil consumed in the Union being imported; calls on the Commission to continue its active involvement in international initiatives, fostering cooperation with third countries to address methane emission reductions by disseminating best practices for cost-effective methane emission reductions across value chain segments and supports the EU's diplomatic outreach campaign to fossil fuel producer countries and companies to become active in the OGMP;

19. Recalls the importance of addressing cybersecurity risks in the energy sector to ensure the resilience of the energy system; calls on the Commission to assess whether further

[32] COM (2020)0299.

actions are needed to prevent attacks against information systems.

INFORMATION ON ADOPTION IN COMMITTEE ASKED FOR OPINION

Date adopted	15.7.2021
Result of final vote	+: 45 –: 16 0: 11
Members present for the final vote	François Alfonsi, Nicola Beer, François-Xavier Bellamy, Hildegard Bentele, Tom Berendsen, Vasile Blaga, Manuel Bompard, Paolo Borchia, Marc Botenga, Markus Buchheit, Cristian-Silviu Buşoi, Carlo Calenda, Maria da Graça Carvalho, Ignazio Corrao, Ciarán Cuffe, Josianne Cutajar, Nicola Danti, Pilar del Castillo Vera, Martina Dlabajová, Christian Ehler, Valter Flego, Lina Gálvez Muñoz, Claudia Gamon, Nicolás González Casares, Bart Groothuis, Christophe Grudler, Henrike Hahn, Robert Hajšel, Ivo Hristov, Ivars Ijabs, Eva Kaili, Seán Kelly, Izabela-Helena Kloc, Zdzisław Krasnodębski, Andrius Kubilius, Miapetra Kumpula-Natri, Thierry Mariani, Marisa Matias, Eva Maydell, Georg Mayer, Joëlle Mélin, Iskra Mihaylova, Dan Nica, Angelika Niebler, Ville Niinistö, Aldo Patriciello, Mauri Pekkarinen, Mikuláš Peksa, Tsvetelina Penkova, Markus Pieper, Clara Ponsatí Obiols, Robert Roos, Massimiliano Salini, Sara Skyttedal, Maria Spyraki, Jessica Stegrud, Beata Szydło, Riho Terras, Grzegorz Tobiszowski, Patrizia Toia, Evžen Tošenovský, Marie Toussaint, Isabella Tovaglieri, Henna Virkkunen, Pernille Weiss, Carlos Zorrinho
Substitutes present for the final vote	Marek Paweł Balt, Damian Boeselager, Valérie Hayer, Othmar Karas, Jutta Paulus, Sandra Pereira

FINAL VOTE BY ROLL CALL IN COMMITTEE ASKED FOR OPINION

45	+
PPE	François-Xavier Bellamy, Hildegard Bentele, Tom Berendsen, Vasile Blaga, Cristian-Silviu Buşoi, Maria da Graça Carvalho, Pilar del Castillo Vera, Christian Ehler, Othmar Karas, Seán Kelly, Andrius Kubilius, Eva Maydell, Angelika Niebler, Aldo Patriciello, Markus Pieper, Massimiliano Salini, Sara Skyttedal, Maria Spyraki, Riho Terras, Henna Virkkunen, Pernille Weiss
Renew	Nicola Beer, Nicola Danti, Martina Dlabajová, Valter Flego, Claudia Gamon, Bart Groothuis, Christophe Grudler, Valérie Hayer, Ivars Ijabs, Iskra Mihaylova, Mauri Pekkarinen
S&D	Marek Paweł Balt, Carlo Calenda, Josianne Cutajar, Lina Gálvez Muñoz, Nicolás González Casares, Robert Hajšel, Ivo Hristov, Eva Kaili, Miapetra Kumpula-Natri, Dan Nica, Tsvetelina Penkova, Patrizia Toia, Carlos Zorrinho

16	-
ECR	Robert Roos
ID	Thierry Mariani, Joëlle Mélin
The Left	Manuel Bompard, Marc Botenga, Marisa Matias, Sandra Pereira
Verts/ALE	François Alfonsi, Damian Boeselager, Ignazio Corrao, Ciarán Cuffe, Henrike Hahn, Ville Niinistö, Jutta Paulus, Mikuláš Peksa, Marie Toussaint

11	0
ECR	Izabela-Helena Kloc, Zdzisław Krasnodębski, Jessica Stegrud, Beata Szydło, Grzegorz Tobiszowski, Evžen Tošenovský
ID	Paolo Borchia, Markus Buchheit, Georg Mayer, Isabella Tovaglieri
NI	Clara Ponsatí Obiols

Key to symbols:
+ : in favour
- : against
0 : abstention

14.7.2021

OPINION OF THE COMMITTEE ON AGRICULTURE AND RURAL DEVELOPMENT

for the Committee on the Environment, Public Health and Food Safety

on an EU strategy to reduce methane emissions
(2021/2006(INI))

Rapporteur for opinion (*): Asger Christensen

(*) Associated committee – Rule 57 of the Rules of Procedure

SUGGESTIONS

The Committee on Agriculture and Rural Development calls on the Committee on the Environment, Public Health and Food Safety, as the committee responsible, to incorporate the following suggestions into its motion for a resolution:

1. Regrets the lack of a comprehensive EU monitoring framework for methane emissions, notably in the agricultural sector, which offers the second-highest overall methane-emission reduction potential of any sector and where the sources of methane emissions are often diffuse, making measurement, reporting and verification challenging;

2. Highlights that some existing monitoring systems already allow us to take action; welcomes the Commission's initiative to develop, in cooperation with international partners, an International Methane Emissions Observatory with a view to achieving a more dynamic system that more accurately assesses the weight of methane emitted by, among other sources, ruminant livestock, and revising methane's global warming potential (GWP), which is a measurement system that statistically assesses the methane emitted over 100 years and whose results overestimate the impact of short-lived gases such as a methane;

3. Calls on the Commission, furthermore, to improve the measurement, reporting and verification of methane emissions in the agricultural sector, in which further disaggregation of emission factors and their determination on a scientific basis is required for all EU production systems; encourages the Commission and the Member States to support and apply available mitigation technologies and practices that have the potential to reduce emissions by taking full advantage of digital tools and the latest scientific developments, while avoiding unnecessary bureaucracy for farmers;

4. Welcomes the Commission's communication of 14 October 2020 on an EU strategy to reduce methane emissions (COM(2020)0663) as a milestone in the governance of non-

CO_2 greenhouse gases in the Union; highlights that global anthropogenic emissions make up 59 % of all methane emissions[33];

5. Recalls the significant impact of the agricultural sector on methane emissions, in that it accounts for 53% of all anthropogenic methane emissions, and takes note of the fact that 26 % of anthropogenic methane emissions originate from waste and 19 % from energy;

6. Underlines, however, that the EU's greenhouse gases (GHG) emissions from European agriculture (including livestock) saw a reduction of 22.2 % between 1990 and 2018 in the EU-28[34], due to a reduction in agricultural emissions of methane by 21 % (enteric fermentation by 22 % and manure management by 17 %); notes in this regard that since 2005 EU agriculture has not contributed to the global temperature increase;

7. Stresses, in addition, that most methane emissions occur outside the EU; calls, therefore, on the Commission to clarify the contribution of EU agriculture to the EU's anthropogenic methane emissions and to differentiate this share from that of the world's agriculture;

8. Notes that biogenic methane is a short-lived gas that differs from CO_2 in its impact on global warming and can be more potent ad interim in terms of its effect on global warming; highlights, in addition, that the impact of biogenic methane emissions on global warming will be neutral if emissions are reduced by 0.33 % annually[35];

9. Points out, furthermore, that methane emissions from agriculture should be regarded differently from methane emissions from processing fossil fuels;

10. Considers, therefore, that they should not be accounted for in the same way, and notes that the impact of biogenic methane on global temperature according to the emission accounting method can be significantly overstated;

11. Calls on the Commission, therefore, to adopt a model based on actual global warming impact rather than on emission inputs, in line with the Paris Agreement; also calls on the Commission to explore the development of a methane efficiency index that would compare kilos of methane generated per unit of output produced for different agricultural products; calls on the Commission, moreover, to take into account the difference between biogenic and fossil methane emissions when designing the methane strategy; stresses that applying a CO_2 equivalent is an inappropriate means to measure methane emissions;

12. Calls on the Commission to define policies and synergistic measures to encourage, support and incentivise the improved climatic performance of agricultural and livestock production through reductions in methane emissions that would lead to cooling effects;

13. Calls, therefore, for regulatory measures based on national and regional specificities and production systems for emissions from agriculture and related land use as part of the

[33] https://ec.europa.eu/energy/sites/ener/files/eu_methane_strategy.pdf
[34] European Environment Agency – https://www.eea.europa.eu/data-and-maps/data/data-viewers/greenhouse-gases-viewer
[35] Lynch, J. et al., 'Demonstrating GWP*: a means of reporting warming-equivalent emissions that captures the contrasting impacts of short- and long-lived climate pollutants', *Environmental Research Letters*, Vol. 15, No 4, 2020; https://iopscience.iop.org/article/10.1088/1748-9326/ab6d7e

'Fit for 55' package in order to achieve ambitious reductions in all GHG emissions in these sectors in the EU;

14. Welcomes in this context the Commission's announcement of the revision of the Effort Sharing Regulation (ESR) to reflect the increased carbon reduction targets through increased incentives to decrease methane emissions, for example, through specific, dedicated eco-schemes and carbon farming initiatives under the new common agricultural policy (CAP) and through other funding streams, private or public; urges the Commission to ensure positive synergies between climate regulation, the Industrial Emissions Directive and the NEC Directive to avoid double regulation; acknowledges the need to establish an accurate baseline for agricultural emissions; points out the need for harmonised calculation methods for methane and a regulatory framework that incentivises progressive reductions in methane emissions to deliver on climate objectives;

15. Notes that the use of a CO_2 equivalent is an inappropriate measure for methane emissions;

16. Stresses the important role of the agricultural sector in offering many solutions for tackling climate change and supporting the EU strategy to reduce and valorise methane emissions;

17. Underlines the importance of recognising the progress made by the agri-food sector in offsetting emissions and restoring soil fertility; highlights that further investment and scientific research in practical conditions and in mitigation measures and technologies is of paramount importance;

18. Calls on the Commission to develop and update an inventory of best practices for the farming sector, in line with the latest technologies and in cooperation with farmers, stakeholders, Member States, and local, regional and national authorities;

19. Supports stimulating the uptake of regenerative agricultural practices, improving access to technologies, data, training and information, and diversifying farmers' income through payments for ecosystem services, thereby increasing their resilience;

20. Considers that there is great potential in breeding, genetics, integrated manure management and the treatment of emissions from slurry, and also in adapting diet and developing feed additives for ruminant and bovine species, in line with the latest fact-based evidence and peer-reviewed science and with animal welfare standards, which can reduce methane emissions without decreasing livestock production, as this production is vital to preserving rural communities and provides a source of employment;

21. Stresses that future policy decisions need to provide a clear framework for the livestock sector to ensure a degree of predictability;

22. Stresses that decreased livestock production could be incompatible with the objective of ensuring European food security; acknowledges that good livestock management

practices can lead to a 30 % decrease in GHG emissions[36];

23. Highlights that with a view to the economic sustainability of EU farms, we should focus on the sustainable production of both plant- and animal-based products as they all constitute an important part of a balanced human diet;

24. Emphasises, in addition, the opportunities presented by measures related to farm management, such as the optimal rearing of young livestock which has the potential to reduce methane emissions at farm level;

25. Welcomes the Commission's plans to revise the Feed Additives Regulation to streamline the current costly and inflexible authorisation process, and considers that technical mitigation measures will complement other significant advances in the livestock sector in rural areas in line with the EU's Farm to Fork Strategy;

26. Welcomes the Commission's study on the status of new genomic techniques (NGT) and strongly supports the finding that NGTs have the potential to contribute to a more sustainable food system; highlights also that the study puts forward opportunities and benefits for the livestock sector, calls for the legal framework for these biotechnologies to be adapted to the latest scientific and technological developments, and considers that targeted research within the Horizon Europe programme and the Economic Resilience Initiative (ERI) Fund is needed in this regard;

27. Underlines the importance of access to efficient production methods with low emissions per product unit;

28. Considers that value-added use of agricultural residues and other by-products could be an important driver of the sustainable circular economy and bio-economy, while recognising food production as a primary source of income for farmers;

29. Recalls, in this regard, that in order to meet new environmental targets, a balance of plant and animal production should be maintained, which will ensure sufficient nutrients and organic matter in EU soils, thereby having a positive influence on biodiversity;

30. Calls for the sustainable acceleration of European biogas production from agricultural waste as an important tool to reduce methane emissions and increase circularity in the agricultural sector and as a source of renewable energy; finds that renewable energy obtained through agricultural residues has significant potential and should be explored through further research and investment and a supportive policy framework to encourage farmers to install agricultural residue technology on farms and ensure access to national energy networks, including community manure and slurry management;

31. Highlights the need for agricultural support schemes to encourage sustainable biogas production and business at farm level, for example by providing energy to local customers and reducing energy transmission and distribution losses, both of which contribute to the improvement of the national energy system and reduce its operating costs;

32. Underlines the importance of giving farmers continuous access to investment support

[36] http://www.fao.org/3/ca7089en/ca7089en.pdf

for biogas production;

33. Calls for better coordination and improved infrastructure between farmers and renewable energy producers in order to enable the uptake of locally connected biogas production; calls on the Commission to include in its forthcoming Long-Term Vision for Rural Areas cross-sector cooperative approaches with and among farmers and local communities; notes that the development of the circular and bio-economy can create more jobs in primary production and stresses that the bio-economy requires new skills, new knowledge and new disciplines to be developed and/or integrated further in training and education in this sector in order to tackle bio-economy-related societal changes, promote competitiveness, growth and job creation, meet the needs of the sector and ensure that skills and jobs are better matched;

34. Welcomes the Commission's announcement of the establishment of an expert group with the aim of analysing the life-cycle methane emissions matrix;

35. Considers that voluntary, minimum-bureaucracy farm-level certification schemes for climate-effective farming, including common measurement and verification data for methane reductions, will be an important tool for monitoring and incentivising methane reductions at farm level; stresses that such a scheme must be based on a broad body of peer-reviewed science, and must be assessed and approved by the Commission;

36. Calls on the Commission to submit a report on measures to support climate-efficient farming and food production by means of third-party certification and to publish an inventory of best practice measures;

37. Highlights the need to assess not just the impact on methane emissions of specific livestock management practices, animal welfare choices, and intensive or pastoral farming choices, but also the impact of supplementing the animal diet with feed additives on animal health, pest resilience, food safety (toxicity), productivity, product quality and the environment; acknowledges the differences between Member States in livestock manure handling practices and highlights the benefit of advisory services and the exchange of best practices;

38. Recognises that livestock grazing can play a central role in the mitigation of GHGs, while taking into account the specific nature of enteric methane emissions linked to the consumption of grass by ruminants and the need to distinguish short-cycle biogenic carbon from long-cycle carbon from fossil resource extraction in the light of recent research[37]; highlights the role of permanent grassland for carbon sequestration and recognises the full potential of woodlands and grasslands for climate action; underlines that carbon storage by grasslands compensates up to 45 %[38] of GHG emissions and underlines the need to integrate the carbon stored by grasslands and their capacity not to release carbon in order to better assess the mitigation potential of agriculture;

39. Urges the Commission to support Member States in the collection of data regarding the

[37] https://www.epa.gov/sites/default/files/2016-08/documents/biogenic-co2-accounting-framework-report-sept-2011.pdf;
https://clear.ucdavis.edu/explainers/biogenic-carbon-cycle-and-cattle;
https://clear.ucdavis.edu/explainers/why-methane-cattle-warms-climate-differently-co2-fossil-fuels
[38] https://webgate.ec.europa.eu/life/publicWebsite/index.cfm?fuseaction=search.dspPage&n_proj_id=5355

carbon sequestration potential of grassland in order to allow for a more targeted approach to climate policy;

40. Acknowledges that animal production is the key activity on permanent grassland, allowing for the survival, economic stability and existence of rural farms in hill and mountain regions, thus preventing the overgrowth of such areas; calls on the Commission to focus investment efforts on funding innovation in methane inhibitors, including those for pasture-based systems, and to collaborate with third countries involved in similar research;

41. Underlines that reducing European livestock production to fight climate change runs the risk of exporting GHG emissions and accepting lower animal health and welfare standards, leading to a shift in production towards other parts of the world and to the abandonment of certain land which can only be used for grazing and which constitutes a rich source of biodiversity, which would have environmental, social and economic repercussions on EU rural regions and landscapes;

42. Emphasises the importance of agriculture in capturing and storing carbon;

43. Notes the important role of a wider circular economy and that the uptake of progressive CO_2 emission removal and the increased circularity of carbon should be incentivised, while avoiding additional pressure on the price of agricultural land which would be to the detriment of young farmers;

44. Calls on the Commission, in accordance with the EU Climate Law, to explore the development of a regulatory framework for the certification of carbon removal based on robust and transparent carbon accounting, which takes into account the differences between GHGs, verifies the authenticity of carbon removal, and supports and rewards farmers with incentives for their mitigation efforts; recalls also the importance of nature-based solutions for increasing natural carbon sinks in accordance with the EU Climate Law; calls on Member States to promote the uptake of mitigation technologies and biogas production using agricultural waste through wider deployment in their national strategic plans, but notes that farmers should also be able to rely on types of support other than that from the CAP;

45. Believes that replacing more expensive, but climate-compatible, domestic production with cheaper, incompatible imports cancels out the green transition in the CAP and increases imports with lower sustainability standards and a higher carbon footprint;

46. Points out that in agriculture a significant share of global methane emissions originates outside the EU and calls on the Commission to ensure that food continues to be produced in the most environmentally sustainable locations; emphasises the need for the EU to take the lead in exchanges of best practices with its third countries' trading partners with the aim of reducing methane emissions from agriculture; stresses the importance of international cooperation for reducing methane emissions;

47. Calls on the Commission to estimate the contribution of imported agri-food products to EU anthropogenic methane emissions through the EDGAR-FOOD database;

48. Stresses that our trade policy must be consistent with our environmental objectives in order to ensure that our efforts are not in vain; highlights the fact that the overall

strategy for reducing emissions from livestock farming must also take into account possible effects on international agricultural trade and the possible transfer of emissions to third countries;

49. Recognises the importance of voluntary industry initiatives aimed at reducing methane emissions and considers that any regulatory initiatives should build upon best practices from existing voluntary actions and must be duly preceded by thorough impact assessments;

50. Points out that the share of non-EU emissions is expected to further increase; stresses that EU action must be embedded in a global approach;

51. Urges that the measures taken must not hamper EU competitiveness;

52. Notes that one-off and irreversible methane emissions in particular, such as from thawing Siberian permafrost, must be given fundamental importance.

INFORMATION ON ADOPTION IN COMMITTEE ASKED FOR OPINION

Date adopted	13.7.2021
Result of final vote	+: 36 –: 8 0: 2
Members present for the final vote	Mazaly Aguilar, Clara Aguilera, Atidzhe Alieva-Veli, Álvaro Amaro, Eric Andrieu, Attila Ara-Kovács, Carmen Avram, Adrian-Dragoş Benea, Mara Bizzotto, Daniel Buda, Isabel Carvalhais, Asger Christensen, Angelo Ciocca, Ivan David, Paolo De Castro, Jérémy Decerle, Salvatore De Meo, Herbert Dorfmann, Luke Ming Flanagan, Martin Häusling, Martin Hlaváček, Krzysztof Jurgiel, Jarosław Kalinowski, Elsi Katainen, Gilles Lebreton, Norbert Lins, Colm Markey, Alin Mituța, Marlene Mortler, Ulrike Müller, Maria Noichl, Juozas Olekas, Pina Picierno, Eugenia Rodríguez Palop, Bronis Ropė, Bert-Jan Ruissen, Anne Sander, Petri Sarvamaa, Simone Schmiedtbauer, Annie Schreijer-Pierik, Veronika Vrecionová, Sarah Wiener, Juan Ignacio Zoido Álvarez
Substitutes present for the final vote	Anja Hazekamp, Pär Holmgren, Sylvia Limmer

FINAL VOTE BY ROLL CALL IN COMMITTEE ASKED FOR OPINION

36	+
ECR	Mazaly Aguilar, Krzysztof Jurgiel, Bert-Jan Ruissen, Veronika Vrecionová
ID	Mara Bizzotto, Angelo Ciocca, Gilles Lebreton
PPE	Álvaro Amaro, Daniel Buda, Salvatore De Meo, Herbert Dorfmann, Jarosław Kalinowski, Norbert Lins, Colm Markey, Marlene Mortler, Anne Sander, Petri Sarvamaa, Simone Schmiedtbauer, Annie Schreijer-Pierik, Juan Ignacio Zoido Álvarez
Renew	Atidzhe Alieva-Veli, Asger Christensen, Jérémy Decerle, Martin Hlaváček, Elsi Katainen, Alin Mituța, Ulrike Müller
S&D	Clara Aguilera, Eric Andrieu, Attila Ara-Kovács, Carmen Avram, Adrian-Dragoș Benea, Isabel Carvalhais, Paolo De Castro, Juozas Olekas, Pina Picierno

8	-
ID	Ivan David
S&D	Maria Noichl
The Left	Luke Ming Flanagan, Anja Hazekamp
Verts/ALE	Martin Häusling, Pär Holmgren, Bronis Ropė, Sarah Wiener

2	0
ID	Sylvia Limmer
The Left	Eugenia Rodríguez Palop

Key to symbols:
+ : in favour
- : against
0 : abstention

INFORMATION ON ADOPTION IN COMMITTEE RESPONSIBLE

Date adopted	28.9.2021
Result of final vote	+: 61 –: 10 0: 7
Members present for the final vote	Nikos Androulakis, Bartosz Arłukowicz, Margrete Auken, Simona Baldassarre, Marek Paweł Balt, Traian Băsescu, Monika Beňová, Sergio Berlato, Malin Björk, Simona Bonafè, Delara Burkhardt, Pascal Canfin, Sara Cerdas, Mohammed Chahim, Tudor Ciuhodaru, Nathalie Colin-Oesterlé, Christian Doleschal, Bas Eickhout, Cyrus Engerer, Eleonora Evi, Agnès Evren, Pietro Fiocchi, Catherine Griset, Jytte Guteland, Teuvo Hakkarainen, Anja Hazekamp, Martin Hojsík, Pär Holmgren, Jan Huitema, Yannick Jadot, Adam Jarubas, Petros Kokkalis, Athanasios Konstantinou, Ewa Kopacz, Joanna Kopcińska, Peter Liese, Sylvia Limmer, Javi López, César Luena, Fulvio Martusciello, Joëlle Mélin, Tilly Metz, Giuseppe Milazzo, Silvia Modig, Dolors Montserrat, Alessandra Moretti, Dan-Ştefan Motreanu, Ville Niinistö, Ljudmila Novak, Grace O'Sullivan, Jutta Paulus, Stanislav Polčák, Jessica Polfjärd, Luisa Regimenti, Frédérique Ries, María Soraya Rodríguez Ramos, Sándor Rónai, Rob Rooken, Christine Schneider, Günther Sidl, Linea Søgaard-Lidell, Nicolae Ştefănuţă, Nils Torvalds, Edina Tóth, Petar Vitanov, Alexandr Vondra, Mick Wallace, Pernille Weiss, Emma Wiesner, Michal Wiezik, Tiemo Wölken, Anna Zalewska
Substitutes present for the final vote	Annika Bruna, Rosanna Conte, Christophe Hansen, Danilo Oscar Lancini, Ulrike Müller, Maria Spyraki

FINAL VOTE BY ROLL CALL IN COMMITTEE RESPONSIBLE

61	+
ID	Simona Baldassarre, Annika Bruna, Catherine Griset, Joëlle Mélin
NI	Athanasios Konstantinou
PPE	Bartosz Arłukowicz, Traian Băsescu, Nathalie Colin-Oesterlé, Christian Doleschal, Agnès Evren, Christophe Hansen, Adam Jarubas, Ewa Kopacz, Peter Liese, Fulvio Martusciello, Dolors Montserrat, Dan-Ştefan Motreanu, Ljudmila Novak, Stanislav Polčák, Jessica Polfjärd, Luisa Regimenti, Christine Schneider, Maria Spyraki, Pernille Weiss, Michal Wiezik
Renew	Pascal Canfin, Martin Hojsík, Jan Huitema, Ulrike Müller, Frédérique Ries, María Soraya Rodríguez Ramos, Nicolae Ştefănuță, Linea Søgaard-Lidell, Nils Torvalds, Emma Wiesner
S&D	Nikos Androulakis, Marek Paweł Balt, Monika Beňová, Simona Bonafè, Delara Burkhardt, Sara Cerdas, Mohammed Chahim, Tudor Ciuhodaru, Cyrus Engerer, Jytte Guteland, Javi López, César Luena, Alessandra Moretti, Sándor Rónai, Petar Vitanov, Tiemo Wölken
The Left	Malin Björk, Petros Kokkalis, Silvia Modig, Mick Wallace
Verts/ALE	Margrete Auken, Bas Eickhout, Pär Holmgren, Ville Niinistö, Grace O'Sullivan, Jutta Paulus

10	-
ECR	Sergio Berlato, Pietro Fiocchi, Joanna Kopcińska, Giuseppe Milazzo, Rob Rooken, Alexandr Vondra, Anna Zalewska
ID	Rosanna Conte, Danilo Oscar Lancini, Sylvia Limmer

7	0
ID	Teuvo Hakkarainen
NI	Edina Tóth
S&D	Günther Sidl
The Left	Anja Hazekamp
Verts/ALE	Eleonora Evi, Yannick Jadot, Tilly Metz

Key to symbols:
+ : in favour
- : against
0 : abstention