Addressing methane emissions via the Energy System Integration & Hydrogen Strategies

1 December 2020, 15:00 – 17:00 CET

Online Event

Hosted by MEP Maria Spyraki

Co-chair of the European Parliament Intergroup on 'Climate Change, Biodiversity and Sustainable Development'

Speakers:

- **MEP Maria Spyraki**
- **MEP Jutta Paulus**
- **Kitti Nyitrai,** Member of Cabinet of Commissioner for Energy Ms. Kadri Simson, European Commission
- **Poppy Kalesi,** Director Global Energy, Environmental Defense Fund
- **Stefan Rolle,** Head of Energy Policy Department, Germany's Presidency of the Council of the European Union
- **Jorgo Chatzimarkakis,** Secretary General, Hydrogen Europe
- **Andreas Graf**, Project Manager, Agora Energiewende
- **Antoine Rostand**, President and Founder, Kayrros
- **MEP Massimiliano Salini**

Welcome Remarks

MEP Maria Spyraki

> ***"The most cost-effective methane emissions savings can be achieved in the energy sector."***

In her welcome remarks, Ms. Maria Spyraki began by stating that **in 30 years we will have to fundamentally transform our energy system and our economy in order to meet the 2050 targets set by the European Union (EU)**. It is therefore necessary to adapt in order to achieve a different and **more sustainable** energy system. Ms. Spyraki argued that a reform of the gas market is necessary to achieve climate neutrality and fulfill the objectives laid out in the European Energy System Integration and Hydrogen Strategies. Methane, even though still overlooked, is a greenhouse gas (GHG) 84 times more potent than carbon dioxide over a 20-year time frame. Ms. Spyraki highlighted that, **because of its high global warming potential, methane is considered a key priority by the EU**. In order to reach Europe's 2030 climate goal of reducing greenhouse gasses emissions by at least 25%, **European methane emissions would need to be reduced by at least one third**. Although agriculture in particular is the single biggest emitter for methane, **it is both faster and cheaper to cut out some of these emissions via the energy sector.** The European Commission has opted for a **holistic approach** to address the global warming impact of methane, **by emphasizing international cooperation first**, before forward-regulating emissions in sectors like energy and agriculture next year. Moreover, the European Commission has adopted a **new tracking disclosure system that can be held as the gold standard for the industry, introducing voluntary comprehensive measures that will make it easier to accurately track and compare the performance of companies**. Finally, Ms. Spyraki highlighted that a commitment to measuring and monitoring methane emissions is a significant first step towards significantly reducing them.

Keynote address

MEP Jutta Paulus

> ***"According to recent findings, we are probably underestimating the methane emissions from the energy sector by at least 25%."***

Ms. Jutta Paulus began by stating that, based on recent research, we are probably underestimating the methane emissions from the use of oil, gas and coal by at least 25%. This is due to the isotopic make-up of

the carbon atom which can vary. **Scientists have found that molecules containing radioactive carbon degrade faster than the ones containing more stable forms of carbon**. Therefore, **a substantial amount of the methane** emissions is not accounted for, as it degrades faster. Most of the emissions of the energy sector can be curbed at no extra cost, thus closing 15% of our emission gap. Ms. Paulus indicated that **investing in green hydrogen instead of further funding blue hydrogen would be beneficial with reducing methane or carbon dioxide emissions**. Other technologies, like carbon capture and storage, would not be as efficient as they typically have efficacy rates of 80 to 85%. Ms. Paulus then underlined that the impacts of climate change are now perceived all around the world and therefore **it is very urgent that not only the energy sector is reformed, but also the agricultural one.** To conclude**,** Ms. Paulus highlighted that **companies must quickly start looking into responsible fossil fuel suppliers since fully switching our energy system to renewables is not yet possible**.

Panel Discussion

Kitti Nyitrai, Member of Cabinet of Commissioner for Energy Ms. Kadri Simson, European Commission

> ***"Energy sectors cannot be considered as separate entities anymore; an integrated approach is necessary as it is the only way to work in synergy towards an effective, cost-efficient transition that will be beneficial for all"***

Ms. Kitti Nyitrai began her intervention by highlighting that Commission President Ursula von der Leyen has put forward her vision of the European Green Deal and that her ambition is to make Europe the first climate-neutral continent by 2050. When looking at the devastating impact the COVID-19 pandemic on economies, the importance of the **European Green Deal as the EU's new growth strategy is even greater for building back our economy better.** Under the leadership of Commissioner Simson, strategies have been developed to translate the Green Deal vision into concrete actions Ms. Nyitrai emphasized how **energy sectors cannot be considered as separate entities anymore; an integrated approach is necessary as it is the only way to work in synergy towards an effective, cost-efficient transition that will not only benefit businesses, but also European citizens**. According to modelling, in all scenarios for climate neutrality, **the role of electricity will significantly increase**. This means that by 2050 there will be a much stronger push for electrification but that also renewable gases, like hydrogen, will be needed to decarbonize certain polluting sectors that have been so far out of reach (e.g. steel industry, some areas of transport). In this context, Ms. Nyitrai highlighted the need to **avoid methane leaks in the supply-chain**. Ms. Nyitrai reiterated that **the European Commission will propose legislation in 2021 on the monitoring, reporting and verification of methane emissions with the ambition to improve the reporting standard within the EU.** To conclude her

intervention, Ms. Nyitrai highlighted that Europe is a small emitter of methane globally, as **a large part of methane emissions are imported** because the oil and gas consumed in the EU are produced outside of it. Thus, **it is extremely important to strengthen the dialogues with both bilaterally and multilaterally.**

Poppy Kalesi, Director Global Energy, Environmental Defense Fund

> ***"In 2040, about 50% of the global warming caused by greenhouse gas emissions will come from anthropogenic methane emitted in 2020"***

Ms. Poppy Kalesi began her intervention by stating that, in 2040, **about 50% of the global warming caused by GHG emissions will come from anthropogenic methane emitted in 2020**. This is due to methane being 84 times more potent than carbon dioxide in the first 20 years after its emission. The European Commission's proposals on Energy System Integration and Hydrogen strategies bring ambition and direction in terms of the evolution of the energy system. Ms. Kalesi argued that it is important to establish a clear merit-order **starting from energy efficiency in Europe's domestic energy networks**, and then prioritizing **reductions in both carbon dioxide and methane emissions**. Moreover, according to the European Commission's modeling, **natural gas will still be used in 2050 albeit in a reduced routing**. Considering that around 25% of the global warming experienced in 2040 will be caused by oil and gas industry activities, **reducing methane emissions directly from the supply chain remains critical, even in a scenario where hydrogen overtakes oil and gas as core energy source.** The European Hydrogen Strategy addresses the issue of methane emissions and makes it clear that **there can be no blue hydrogen without solving the dual carbon dioxide and methane performance challenges.** Finally, Ms. Kalesi highlighted how this issue is a great starting point for addressing a crucial piece of the climate equation: **methane emissions performance should be as critical as financial robustness**.

Stefan Rolle, Head of Energy Policy Department, Germany's Presidency of the Council of the European Union

> ***"More comprehensive data regarding methane emissions due to production, transportation and consumption in the energy sector is needed to take impactful action."***

Mr. Stefan Rolle underlined how **research on the issue of methane emissions has been ambiguous so far and how improved data availability as well as empirical studies are needed**. The energy system and hydrogen strategies have **a holistic approach to the methane emissions issue**, meaning that they do not only include the energy sector but also other such as waste management, etc. Mr. Rolle highlighted that **Germany is dedicated to supporting research on evaluation of methane emissions** to broaden knowledge on the issue and to find common, science-based grounds, for future discussions on policy and regulation. So

far, multiple studies have been funded by the German Government to conduct further research on methane and other GHG emissions in the energy sector. Mr. Rolle indicated that discussions held between Germany and other Member States of the EU concluded that reporting standards need to be implemented and harmonized across the EU. To conclude, Mr. Rolle emphasized Germany's adherence and support to the European Commission's proposals.

Jorgo Chatzimarkakis, Secretary General, Hydrogen Europe

> ***"Changes should be undertaken in different areas, including agriculture, to significantly reduce methane emissions."***

Mr. Jorgo Chatzimarkakis began by stating the importance of **including the agricultural sector in the strategies that will be put in place at the European level**. Both the European Parliament and the European Council have adopted a minus 55% of CO2 emission approach but, on the other hand, the Common Agricultural Policy (CAP) was adopted with only few significant changes. Mr. Chatzimarkakis also highlighted how **acting on the agricultural sector would have a positive impact on methane emissions, but also on other environmental issues such as loss of biodiversity, etc.** Moreover, because fertilizers are mainly produced with natural gas, i**t is also important to include agriculture in the Hydrogen Strategy**. This can be done fast **by using green hydrogen as feedstock for fertilizers**. The hydrogen sector also has a promising technology to reduce methane emitted from waste: **pyrolysis**, which also generates clean hydrogen. Hydrogen can effectively replace coal, oil and natural gas for the production of energy as planned by the EU Hydrogen Strategy. However, it is not advisable to replace biogas or synthetic gases as they represent a good way to reduce methane emissions as they are produced from renewable sources. Mr. Chatzimarkakis also highlighted the **importance of reducing methane leakage outside of the EU**, by creating a dialogue **with fossil energy producers.**

Andreas Graf, Project Manager, Agora Energiewende

> ***"The sustainable energy debate cannot simply be about opposing green to blue hydrogen, but it must also be about implementing strategies to phase out grey hydrogen as quickly as possible."***

Mr. Andreas Graf began by pointing out that methane mitigation strategies are too often being disregarded in favor of CO2 mitigation strategies. Reducing methane emissions could produce a much **stronger cooling effect** in a shorter amount of time. Mr. Graf also called out the **highly polluting nature of methane leakage from power plants**, explaining that methane combustion is **no longer compatible with Europe's future**. As an alternative Mr. Graf suggested looking for **clean hydrogen-based solutions**, however acknowledging the dilemmas such a transition might bring about. Mr. Graf raised the following questions: should we accept that methane investments could still have a **short-term benefit**, as transitioning to renewable energies

might take some time? Or should we commit to an **absolute and immediate phasing out** of fossil fuels? Moreover, the EU should engage with its main international partners, especially China in finding global solutions to the methane emissions issue. Mr. Graf concluded by expressing his hope about the EU Methane Strategy potential being a key first step towards a strong global strategy.

Antoine Rostand, President and Found, Kayrros

> ***"Methane leakage is an issue mainly happening outside of EU borders, which is why we need strong EU-wide methane import standard."***

In his statement, Mr. Antoine Rostand raised his concern about the rapidly growing methane emissions, which have **increased by 254%** since the beginning of the industrial era. By contrast CO2 emissions rose by 143% in that same period. Mr. Rostand pointed out that this uncontrolled mainly anthropogenic methane emission growth is strongly **related to the lack of efficient monitoring technologies.** Mr. Rostand explained that today the EU has the technological capacities and programs necessary to take action and tackle the methane emission issue, notably referring to the **European Commission's Copernicus Sentinel 5P and Copernicus Sentinel satellite programs**. Mr. Rostand called for the implementation of **efficient standards** to eliminate methane emissions. While Copernicus Sentinel 5P can **detect and quantify large methane leaks**, Copernicus Sentinel 2 offers **high-quality images** which allow to **identify the specific source** of leakage. Accordingly, with the satellite programs the European Commission and Kayrros have been able to identify **1GT of CO2-equivalent visible methane (per annum) in 2019,** which could be eliminated by 95% within 2-3 years. Finally, Mr. Rostand discussed the main world regions of methane leakage, highlighting Europe's small contribution to global emission's and reiterating Mr. Graf's call for **stronger global cooperation** on the matter.

Reactions by MEPs

MEP Massimiliano Salini

> ***"The pathway to decarbonizing the European Union has been set and with the technologies that we possess, we have the opportunity to become a leader in this regard."***

Mr. Massimiliano Salini first stressed the importance of **gas as an alternative energy source** in the energy transition, as it could reduce GHG emissions in the **most cost-efficient way**. While Mr. Salini demonstrated his support for the European Commission's 'Energy first principle", he also underlined the importance of **finding solutions at the lowest possible cost**. "To reach Carbon neutrality by 2050 we urgently need to **change the current paradigm**," Mr. Salini further asserted. To do so, Mr. Salini suggested establishing a

classification of gas carriers to clearly distinguish between **renewable, decarbonized and low carbon gases**, including hydrogen. These classifications should be paired with strong **international cooperation** and **common definitions and standards** for quantifying the global emissions of hydrogen. According to Mr. Salini, the EU should in parallel promote its **domestic hydrogen production** and consider hydrogen importations only as a last resort and only once common international standards are well established.

Discussion with the audience, moderated by Ms. Poppy Kalesi

During the Q&A session with the audience, one important question was addressed to all panellists namely **what their vision of a successful European energy transition would look like in 2030**. Mr. Salini affirmed that the best tool to ensure Europe's success in its clean energy transition would be to adopt a **balanced political approach** while also fostering and combining different **new technologies**. Ms. Nyitrai on her end reiterated the importance of **defining concrete targets** to achieve Europe's Sustainable energy aims. Mr. Chatzimarkakis referred to the European Commission's clear-cut indicators of success, which call for **a transition towards 10 million tons of renewed or reproduced hydrogen by 2030**. For Mr. Chatzimarkakis, success would be to surpass this target. Another important question was raised regarding the **global warming potential of hydrogen**. According to Mr. Chatzimarkakis, the global warming effect of clean hydrogen should **not be too significant**, yet with his team he is currently adopting hydrogen strategies to collect more data and be able to measure the resource's different impacts. Finally, the panellists further discussed the **potential use of satellite programs**, such as the Copernicus Sentinel programs, to detect **methane leakages from natural sources**, such as biomass burning or thawing of permafrost.

Closing remarks

Poppy Kalesi, Director Global Energy, Environmental Defense Fund

The panel ended on a positive and hopeful note as Ms. Kalesi expressed her satisfaction and gratitude about the work that has been done by the EU, in particular by the MEPs, on methane emissions within the last two years. Ms. Kalesi concluded the discussion by praising the **shared sense of community** in Europe around this issue: "The EU's system and energy transition are full of uncertainties and it can sometimes be difficult to take decisions, but I am happy to see that we are moving forward and taking ambitious decisions."