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## **HOW FAR SHOULD THE NEW EU METHANE STRATEGY GO?**

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### **Overview**

Methane is the second after CO<sub>2</sub> most important greenhouse gas (GHG), although it remains in the atmosphere for a relatively short time of 12 years. When released into the atmosphere, methane negatively affects the environment, human health and safety. However, if captured, methane provides economic value to energy production. The EU efforts to decarbonize its energy system have so far mostly been concentrated on CO<sub>2</sub> emissions mitigation. The Regulation (EU) 2018/1999 on the Governance of the Energy Union requires the European Commission to propose the EU strategic plan for methane, which will become an integral part of the EU long-term climate strategy. Methane emissions accounted for 11% of total EU GHG emissions in 2016 with agriculture, waste and energy sectors as the major sources. Since the mid-1990s methane emissions have been decreasing, partly due to the adoption of the first EU methane strategy published in 1996. However, the strategy was not a complete success, since it failed to bring about the expected level of emission cuts.

### **Methods**

Much of the current literature on methane emissions pays particular attention to methane measurement and quantification methods; the best practices to limit methane emissions such as LDAR (Leak Detection and Repair) programmes; and the most suitable policy and regulatory tools to address this challenge. Despite the vast literature on the situation is the main oil and gas producers such as US or Canada, only few authors analysed this challenge in the EU and its ambitious climate agenda context. This paper seeks to fill in the gap in the literature, by assessing the first EU Methane Strategy proposed by the European Commission in 1996. In particular, the paper addresses two questions: to what extent the 1996 EU methane strategy contributed to the EU methane emissions reduction between 1990 and 2010? What are the key lesson learned from the implementation of the first EU strategy on methane?

### **Results**

We analysed the data on methane emissions as reported in the Annual EU GHG inventory 1990-2016 and assessed it against the objectives set by the methane strategy. We found out that:

- methane emissions in the EU declined by 30% between 1990 and 2010 and fell short of meeting the objectives. The European Commission expected that the implementation of suggested policy measures would result in a 30% reduction in 2005 and 41% in 2010 with regard to 1990 levels.
- Only a portion of the methane emissions abatement can be attributed to the dedicated EU policies, since the 86% decrease in methane emissions from the mining sector, was mainly the result of the dramatic decline in mining activity. Similarly, the emissions from enteric fermentation diminished due to a lower number of cattle and sheep (-17% below 1990 levels in 2010).
- On a positive note, the EU legislation addressing emissions in waste sector proved to be successful and brought about the largest reductions (-51,5 Mt CO<sub>2</sub> equivalents or -33%), despite falling short of meeting a 60% reduction target.

We also analysed the reasons why the 1996 Strategy was not a complete success. First, the proposed measures were concentrated on reducing methane emissions, neglecting opportunities stemming from the use of captured gas, especially in agriculture. Moreover, the Commission did not take this opportunity to improve the quality of data on methane emissions reported by the EU countries nor propose a harmonization of methane emissions measurement, reporting and verification standards in the EU. This would decrease the inherent uncertainty of methane measurement and would influence the choice of policy tools.

### **Conclusions**

The new strategy paper on methane, which the European Commission is going to present in early 2020s, needs to respond to the new realities. Firstly, the challenge is no longer just to reduce methane emissions, but to decarbonise the EU economy by 2050; secondly, the adoption of the Circular Economy Package puts more emphasis on the efficient use of resources and waste minimization, creating more incentives to use waste to generate energy. Last but not least, the projected increase in natural gas imports to the EU requires the European Commission to tackle the emissions occurring along the entirety of natural gas supply chains, both within the EU and beyond the borders of MSs.

We authors suggest that the new EU methane strategy should embrace the following elements:

- increased transparency and accuracy of methane emissions measurement in the EU,
- the adoption of an integrated approach combining the sectoral measures to decrease methane emissions from the key sectors: agriculture, waste and energy. For instance, the existing gas infrastructure could be used to transport biomethane produced from agricultural waste.
- setting an EU-wide methane intensity objective, which could be integrated into the updated EU Nationally Determined Contribution under the Paris Agreement framework.
- European Commission should foster the bilateral cooperation with the key methane emitters and gas exporters, mainly US, Canada, Norway, Russia and through the existing international fora such as the Global Methane Initiative or the Climate and Clean Air Coalition.

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