



How EU methane action can slow global warming

Limiting the climate impact
of Europe's gas supply

Cutting methane emissions represents a crucial opportunity in the fight against climate change. Over the last century, the amount of methane in the atmosphere has more than doubled and methane pollution from human activity now accounts for at least a quarter of global warming. In its [latest report](#), the UN International Panel on Climate Change (IPCC) underlines the urgent need for “deep reductions” in non-CO₂ emissions like methane, to keep the 1.5C Paris Agreement target within reach. Moreover, [research](#) shows that a rapid, large-scale effort to tackle methane emissions, using current technologies and data, could slow the rate of current warming by 30%. In the near future, improved monitoring tools, including satellites such as [MethaneSAT](#), will make it faster and easier to detect and control emissions.

Though decreasing methane in all major emitting sectors - including agriculture, energy and waste- is important, targeting methane pollution from oil and gas is the fastest and most cost-effective option to slow down the speed of warming almost instantly. According to the International Energy Agency (IEA), 70% of methane emissions in this industry can be reduced using existing technologies. According to the UN Environment Program/Climate and Clean Air Coalition (UNEP/CCAC) [Global Methane Assessment](#) 60-80% of available mitigation measures in the oil and gas sector have low or zero-net costs. Several major European

companies, actively engaged in the [Oil and Gas Methane Partnership](#) (OGMP) and [Oil and Gas Climate Initiative](#) (OGCI), have committed to sharing reliable data, capping upstream emissions and expressed their interest in seeing global standards emerge.

As the world’s largest natural gas importer, with 85% (according to 2019 figures) of its consumption coming from outside its borders, the European Union (EU) has both the clout and responsibility to unlock major methane reductions, not just within the bloc but around the globe. To do so, it must adopt a robust and comprehensive framework aimed at mitigating domestic and upstream emissions along the supply chain. The [EU Methane Strategy](#) published last year lays the groundwork for this task.

Building on the momentum around COP 26, the [upcoming EU legislative proposals](#) under the second wave of the Fit for 55 Package should require companies to measure, report, and verify all methane emissions, improve leak detection and repair on all fossil gas infrastructure, and ban routine venting and flaring. Moreover, the position of Environmental Defense Fund is that the legislation should also introduce a methane emissions performance standard of near zero emissions (i.e. 0.2% emissions intensity by 2025 for all gas consumed in the EU) and promote data collection initiatives, such as satellite mapping of methane emissions under the Copernicus Programme.



Methane: a climate emergency

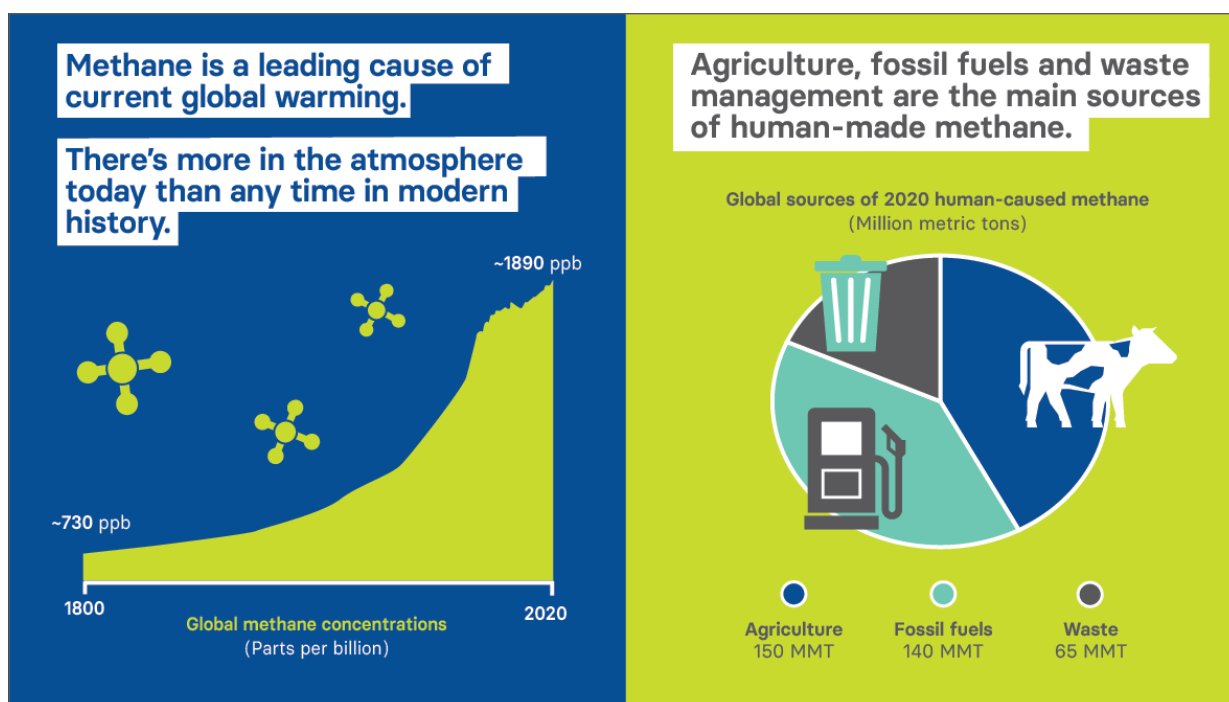
The amount of methane in the atmosphere has [more than doubled since pre-industrial levels](#) and human-made methane emissions are now responsible for at least 25% of today's global warming¹.

According to the UN International Panel on Climate Change (IPCC), concentrations of methane are now higher than at any time in the last 800,000 years and have grown by over 150% since the industrial revolution (more than three times the rate of CO₂).

Methane is a highly potent greenhouse gas, with more than 80 times the global warming potential of CO₂ in the following 20 years after it is emitted². It is also much shorter-lived, breaking down in the atmosphere within just a decade or two. As a result, by fully deploying known solutions across key emitting sectors, it is possible not only to cut methane emissions in half by 2030 but also to avoid 0.25C of

additional warming already by 2050³. The importance of addressing methane emissions is also recognized by the IPCC which says that limiting methane, could have benefits both for health and the climate⁴. Substantially reducing the levels of methane in the atmosphere will be critical if we are to limit global warming to 1.5C by end-of-century.

Urgent reductions in methane pollution are also required if we are to meet the EU's common objective to become the world's first climate neutral continent by 2050. In fact, reducing methane has an outsized impact on near-term temperature rise: a recent [scientific paper](#) by scientists at Princeton, Duke, Penn State and Texas A&M universities as well as Environmental Defense Fund shows that a rapid, large-scale effort to cut methane emissions could slow the rate of current warming by 30%. The study also finds that 80% of economically feasible actions come from the oil and gas sector⁵.

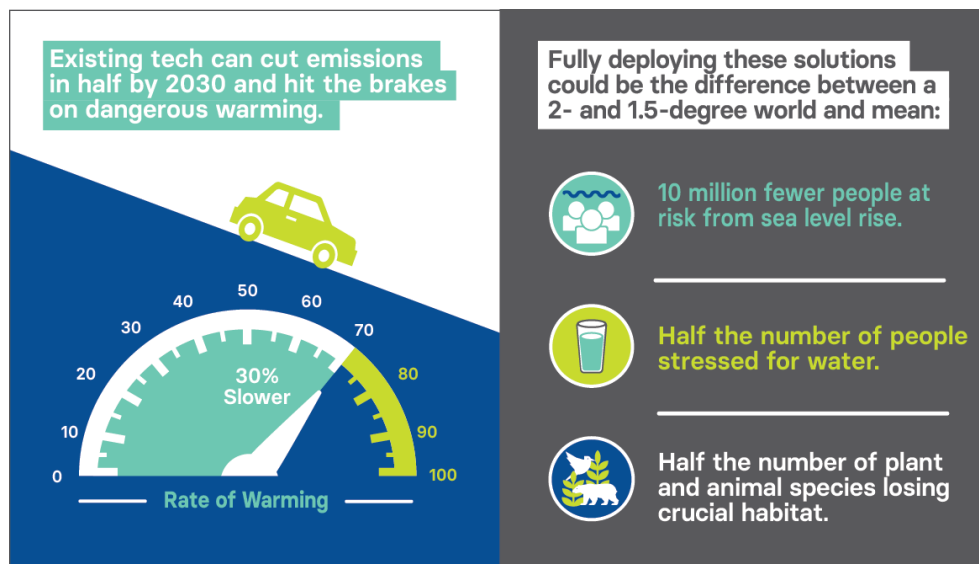


1. Intergovernmental Panel on Climate Change (2021). Climate Change 2021, The Physical Science Basis. Working Group Contribution to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change.
2. Nature (2021). '[Control methane to slow global warming — fast](#)', Nature 596, 461.
3. *Ibid.*
4. Intergovernmental Panel on Climate Change (2021). Climate Change 2021, 41
5. Ilissa B Ocko et al. (2021). Acting rapidly to deploy readily available methane mitigation measures by sector can immediately slow global warming. *Environmental Research Letters* 16.

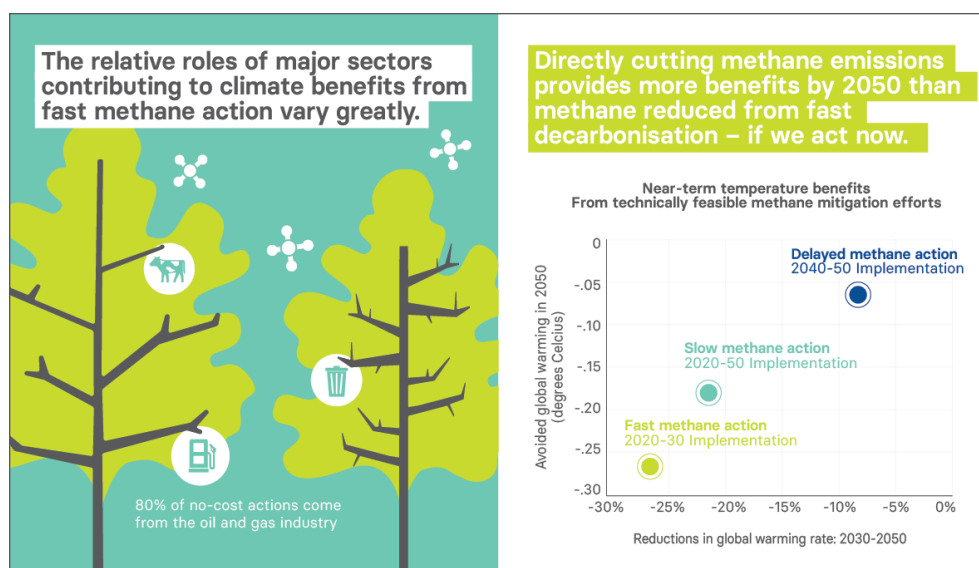
The quick win: oil and gas methane

Decreasing methane from all major emitters – agriculture, energy and waste sectors – is important, but reducing methane pollution from the oil and gas sector remains the fastest, lowest-cost opportunity to slow down the speed of global warming almost immediately. The majority of actions in the oil and gas industry being low-cost, methane is Europe’s “low hanging fruit” in the fight against climate change.

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Several European companies have already made commitments to reduce oil and gas methane emissions through the [Oil and Gas Climate Initiative](#) and have stated their support for government policy and regulation, in line with their efforts and interest in seeing global standards emerge through the [Methane Guiding Principles](#).

Principles driving down methane emissions must also be considered when promoting the constructive role of natural gas in Europe’s transition towards a net-zero carbon economy by 2050. In particular, global methane emissions need to be reduced, if “blue” hydrogen is to play a role in the energy transition now or in the future. Strong EU methane standards and low-cost measures already at the industry’s disposal remain the fastest opportunity to meet Europe’s decarbonisation targets in this regard.

As identified by the IEA in the [2021 Methane Tracker](#), efforts to reduce methane emissions in the oil and gas sector have often been held back by a lack of reliable data. To develop good quality data and catalyse action, UNEP's International Methane Emission Observatory will bring together scientific measurement studies, satellites, industry reporting through the [Oil and Gas Methane Partnership](#) (OGMP2.0), and national inventories.

[Over 60 participating companies](#) have already committed to following OGMP 2.0 measurement and reporting standard and thereby to increase the accuracy and granularity of their methane emissions reporting for both operated and non-operated assets.

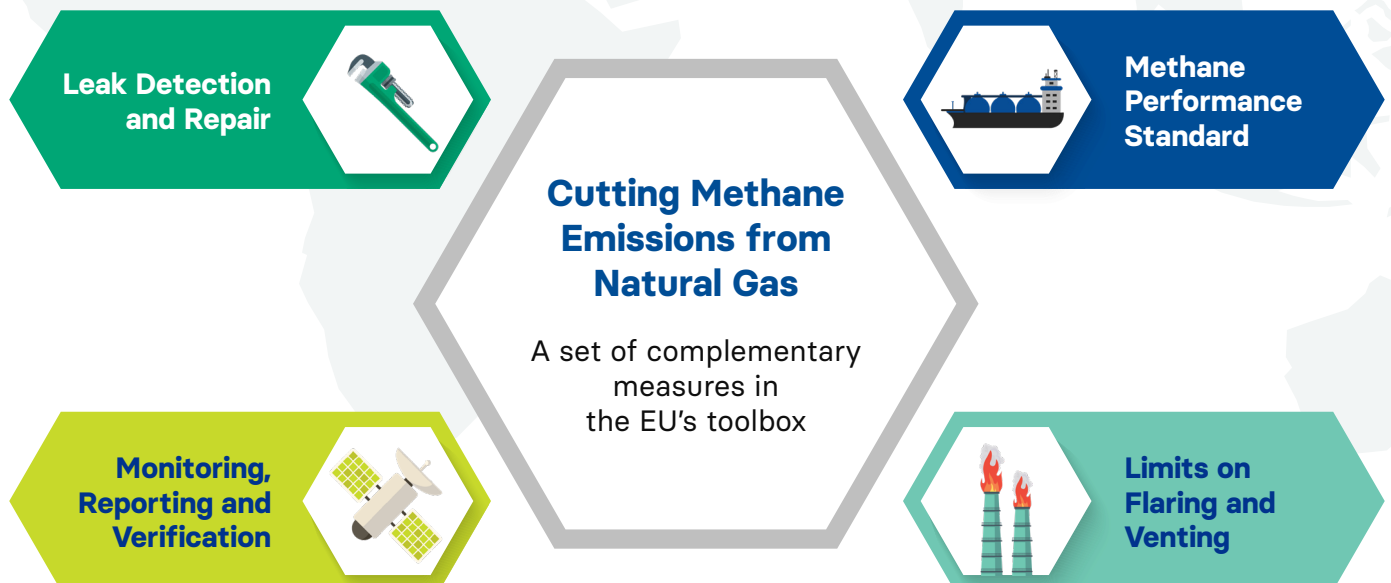
Corporate commitments to reduce emissions and improve reporting are important, but mitigation requires a strong set of policy measures to provide market certainty and ensure emission reductions are achieved. A systematic and effective methane Leak Detection and Repair mechanism (LDAR) is critical for identifying and quickly addressing emissions. It should be carried out across all sectors of the natural gas value chain – upstream, midstream and downstream.

Limits on venting and flaring are also essential elements of a holistic regulatory approach - as they represent sources with major mitigation potential across the supply chain. A robust Measurement

and Monitoring, Reporting and Verification (MRV) framework is essential for establishing emission baselines, identifying mitigation opportunities and measuring progress. Emerging technologies – notably, those that collect data at different scales through ground aerial and satellite monitoring – make rigorous MRV protocols increasingly viable and would allow methane emissions to be accounted for internationally and along the entire supply chain.

Action on methane will become easier as we can gather better data on where methane emissions are coming from. Technologies are making it faster and easier to detect emissions. For example, solar-powered lasers can pinpoint leaks and provide real-time data analytics to facility managers on mobile devices. Sensor-enabled drones can also scan facilities for emissions.

The next frontier of monitoring is around the corner. Satellites, such as [MethaneSAT](#), will locate and measure methane emissions with precision and at a scale never before achieved, and set a new bar for transparency. It is designed to generate global emissions data on a regular basis which will enable both private companies and public administrations to identify, manage, and reduce methane emissions. This will fill a critical gap between point source observation and global mapping satellites with high-precision area-source detection.



Why Europe is the key to reduce methane

As the world's largest natural gas importer, with 85% of its consumption coming from gas produced outside its borders, Europe plays a significant role in driving methane emissions globally. This is particularly critical, as the [‘methane footprint’](#) from emissions arising before the gas reaches the EU border is [estimated to be between three and eight times the emissions from the domestic EU gas supply chain](#).

Europe's share of exports from key supplier countries offers an opportunity to exert tremendous influence on global methane emissions. For example, around 70% of gas exports from Russia and Algeria go to the EU. What is more, [most EU gas imports come by pipeline](#), making it more expensive for producers to ship their gas to other markets if the EU were to implement methane emission restrictions.

As a result, the EU can leverage this position to bolster its climate leadership and address emissions associated with European gas imports by adopting a methane emissions performance standard for all gas consumed in the EU, as described in a joint [policy brief by EDF and the Florence School of Regulation](#) (FSR).

Based on [existing industry commitments](#), the FSR and EDF have suggested an initial benchmark upstream emission intensity of 0.2% (meaning the share of methane emitted to the atmosphere in the volume of gas produced). All gas

sold in the EU with a higher methane intensity than this threshold would be subject to financial penalties.

The EU could further play a central role in ensuring that ambitious commitments to reduce methane emissions across global supply chains are included in the conclusions of the UN Climate Conference (COP26). One way to do this would be to work with other major oil and gas importing countries as well as producer countries to harmonise international emissions standards for oil and gas.

A methane performance standard would complement the mandatory measures on MRV and LDAR and should be a mandatory requirement on all gas consumed in the EU – whether domestically produced or imported. This is necessary to ensure methane reductions across the entire EU's gas value chain.

As described in the [enervis report on EU Methane Pricing in the Energy sector](#), the projected impact on EU household gas prices of implementing methane penalties would be small, due to the large share of existing taxes and other charges in end-user gas prices. The estimated average price increase for residential gas in the EU would be just 1% at 25 €/tCO₂eq, and 5% at 100 €/tCO₂eq (and less if producers reduced their emissions in response to the methane price).



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Call to action

Reducing methane emissions requires urgent action from all European institutions and Member States. At the upcoming G20 Summit and COP26, Europe must assume a leadership role to finally address methane pollution globally. With support from key stakeholders, the EU must also set up a robust and comprehensive framework to mitigate domestic and upstream footprint emissions.

What the European Commission can do

Cutting methane emissions is key if the EU hopes to deliver on its ambition set out in the Green Deal and Climate Law to become the first climate neutral continent by 2050. The European Commission must ensure that [its proposal](#) for a legislative act to reduce methane emissions in the energy sectors, contains the following regulatory measures:

- A compulsory Measurement, Reporting and Verification (MRV) framework to address all energy-related methane emissions related to all gas consumed in the EU;
- An obligation for companies to implement robust Leak Detection

and Repair (LDAR) practices on all fossil gas infrastructure;

- A formal ban on routine venting and flaring;
- A mandatory methane emissions performance-based requirement of 0.20% upstream methane emission intensity by 2025, for all gas consumed (domestically produced and imported) in the EU;

Additional support must also be given to data collection initiatives, such as satellite mapping of methane emissions under the Copernicus Programme, to ensure the availability and reliability of necessary data.

What the European Parliament can do

Ahead of the European Commission's proposal, the European Parliament's [own-initiative report](#) should send a strong signal, reflecting the EU public's desire for swift and effective climate action.

The Parliament should address methane emissions in a comprehensive fashion across all sectors. To achieve this, the report should contain clear policy recommendations relating to MRV, LDAR and banning of routine venting and flaring.

Beyond these technical measures for the oil and gas sector, the Parliament must proactively request a methane performance standard for all gas consumed (domestically produced and imported) in the EU.

An ambitious report widely endorsed by all political groups could help streamline the co-legislative process expected to begin in early 2022.

What European Member States can do

Recognising that swift methane reductions can be achieved with existing technologies, European Member States must set an example and clean up their gas supplies. Leveraging the EU's role as a major buyer of internationally traded oil and gas, they have the means to accelerate methane reductions worldwide by harmonising international emissions standards. Specifically, EU Member States need to show a strong and united leadership towards key supplier countries at the upcoming COP26 to position methane as a central issue on

the global stage. Within the Council, Member States can also build consensus on the need to address methane pollution and commit to improving the European Commission's proposal during the co-legislative process.



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