

# How EU methane action can slow global warming now

LIMITING THE CLIMATE IMPACT OF EUROPE'S GAS SUPPLY



# Executive Summary

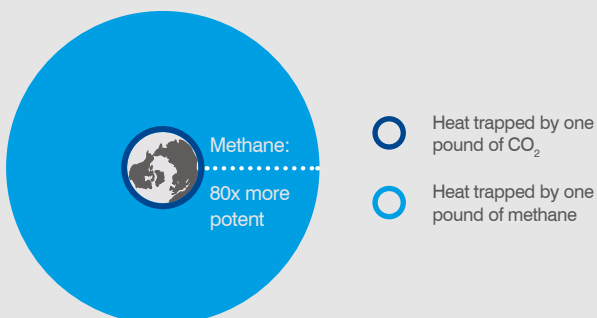
*Methane is a highly potent greenhouse gas with more than 80 times the warming potential of CO<sub>2</sub> for the first 20 years it is in the atmosphere. Research shows that a rapid, large-scale effort to tackle methane emissions, using existing technology and data, could slow the current rate of warming by 30%.*

Methane emissions from all sources need to be reduced. Targeting reductions in oil and gas is highly regarded as the quickest, cheapest and most effective way to slow down global warming and achieve Europe's Green Deal.

The European Union introduced the [Global Methane Pledge](#) (GMP) at COP26 alongside the US and over 100 other countries, cementing methane on the world stage. Signatories pledged to reduce their collective methane emissions at least 30% by 2030. Governments must now take the necessary steps to deliver on this promise.

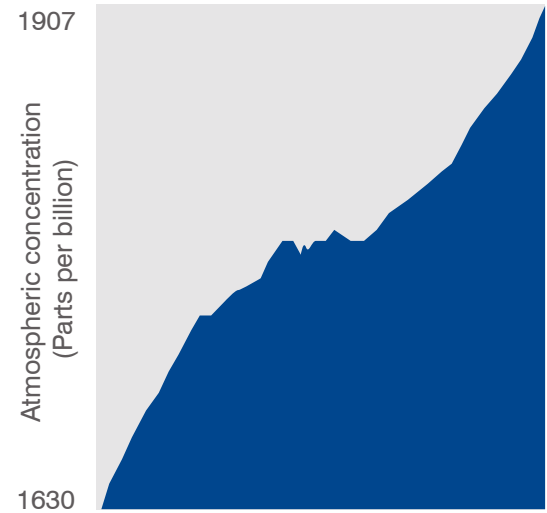
## Methane's strong, near-term impact on warming

Over the following 20 years, the methane emitted today will trap 80x more heat than an equal amount of CO<sub>2</sub>.



## Record methane rise since pre-industrial era

NOAA Global Monitoring Laboratory



● Rise in atmospheric methane concentrations: 1983-2021

The amount of methane in the atmosphere has more than doubled over the last century. Methane pollution from human activity now accounts for at least 25% of global warming.

### Why is the energy sector crucial?

The EU is the largest importer of oil and gas in the world. If Europe acts, markets listen. But aside from market power:

- 70% of methane emissions in the oil and gas sector can [be reduced using existing technologies](#) (International Energy Agency, IEA).
- 40-80% of available mitigation measures in the oil and gas sector have [low or zero-net costs](#) (UN Environment Programme, UNEP).

# Call to action for EU policymakers

The [EU's legislative initiative to reduce energy sector methane emissions](#) is a unique opportunity to set the gold standard for methane mitigation and drive down emissions not only in Europe but globally.

To achieve this, we believe EU methane legislation must include ambitious action across the following key areas:

- Strong measuring, reporting and verification (MRV) rules supplemented by a solid framework for leak detection and repair (LDAR), and strong rules for limiting venting and flaring (LVF) are essential to help achieve the EU's goal of reducing greenhouse gas emissions at least 55% below 1990 levels by 2030. For that reason, the adopted act needs to – as a minimum – reflect best practice.
- The EU is dependent on imports for 90% of gas and 97% of oil consumption. The legislation

therefore needs to credibly tackle upstream emissions associated with these imports by applying the regulatory framework for MRV, LDAR and LVF, also to operators exporting fossil fuels to the EU.

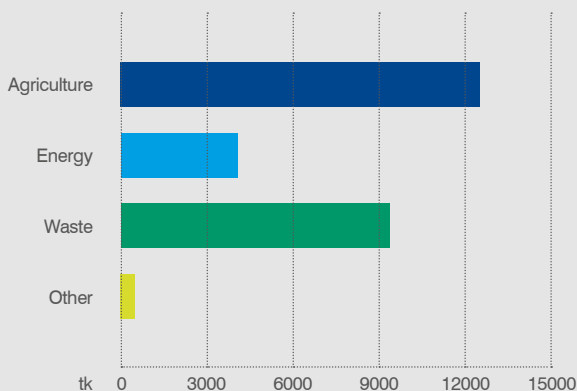
- As LDAR and LVF cannot reduce all methane emissions, the EU should also introduce a performance standard, or an equivalent measure that achieves the same impact, for all gas consumed in the EU that are both locally produced and imported.
- The EU has pledged to become a leader in global climate action. The adopted act therefore needs to meet the EU's commitments under the [Global Methane Pledge](#), and go further.

For more details on our policy recommendations for the draft legislation, visit: [www.edfeurope.org](http://www.edfeurope.org).

## EU METHANE DATA

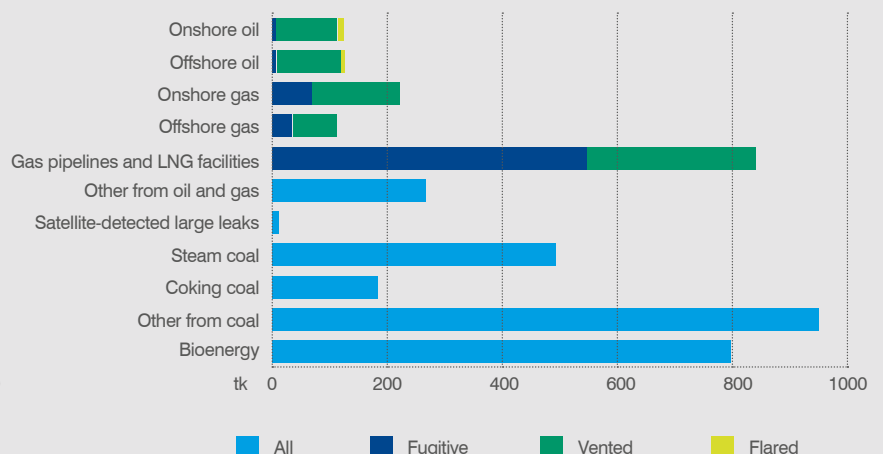
### Europe methane emissions from all sources

Source: IEA estimate from available datasets



### Europe methane emissions from energy sources

Source: IEA estimate



# Methane: a climate emergency

Methane is a highly potent greenhouse gas with more than 80 times the warming potential of CO<sub>2</sub> for the first 20 years it is in the atmosphere<sup>1</sup>.

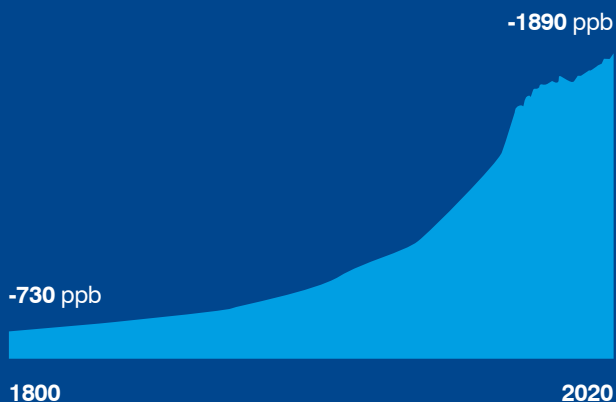
The amount of methane in the atmosphere has [more than doubled since pre-industrial levels](#) and human-made methane emissions are now responsible for roughly 30% of today's global warming.<sup>2</sup> According to the IPCC, the concentration of methane is now higher than at any time in the last 800,000 years and has grown at more than three times the rate of CO<sub>2</sub> levels.

1 Nature (2021). 'Control methane to slow global warming — fast', Nature 596, 461.

2 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.

Methane is a leading cause of current global warming. There's more in the atmosphere today than any time in modern history.

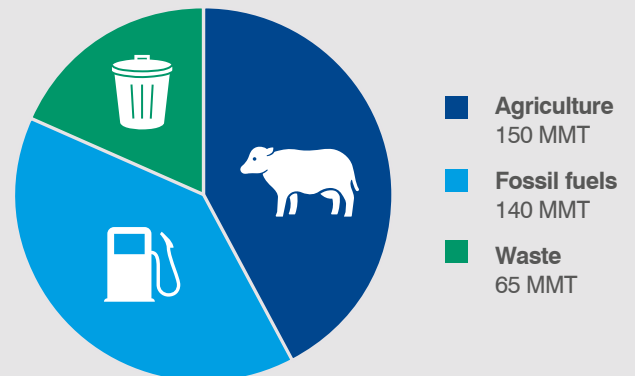
**Global methane concentrations**  
(Parts per billion)



Source: 2 Degrees Institute, 2021

Agriculture, fossil fuels and waste management are the main sources of human-made methane.

**Global sources of 2020 human-caused methane**  
(Million metric tons)



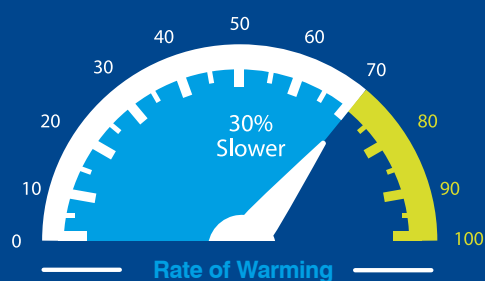
Source: International Institute for Applied Systems Analysis, 2020

By fully deploying known solutions across key emitting sectors, it is possible to not only cut methane emissions in half by 2030, but also to avoid a 0.25°C rise in temperature by 2050, and more than 0.50°C by the end of this century.<sup>3</sup> A half-degree Celsius would make a critical difference in a world trying to keep warming below 2°C. It could mean 10 million fewer people at risk from sea level rise; half the number of people stressed for water and half the number of plant and animal species losing crucial habitat.

[Recent research](#) by scientists at renowned universities<sup>4</sup> and the 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 sector<sup>5</sup>, which accounts for around 30% of methane emissions from human activity.<sup>6</sup>



Existing tech can cut emissions in half by 2030 and hit the brakes on dangerous warming.



Source: Ocko et al. 2021

Fully deploying these solutions could avoid .5 degrees Celsius of warming by end of century.



10 million fewer people at risk from sea level rise.



Half the number of plant and animal species losing crucial habitat.



Half the number of people stressed for water.

Source: Intergovernmental Panel on Climate Change, 2018

3 *Ibid.*

4 Princeton, Duke, Penn State and Texas A&M.

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.

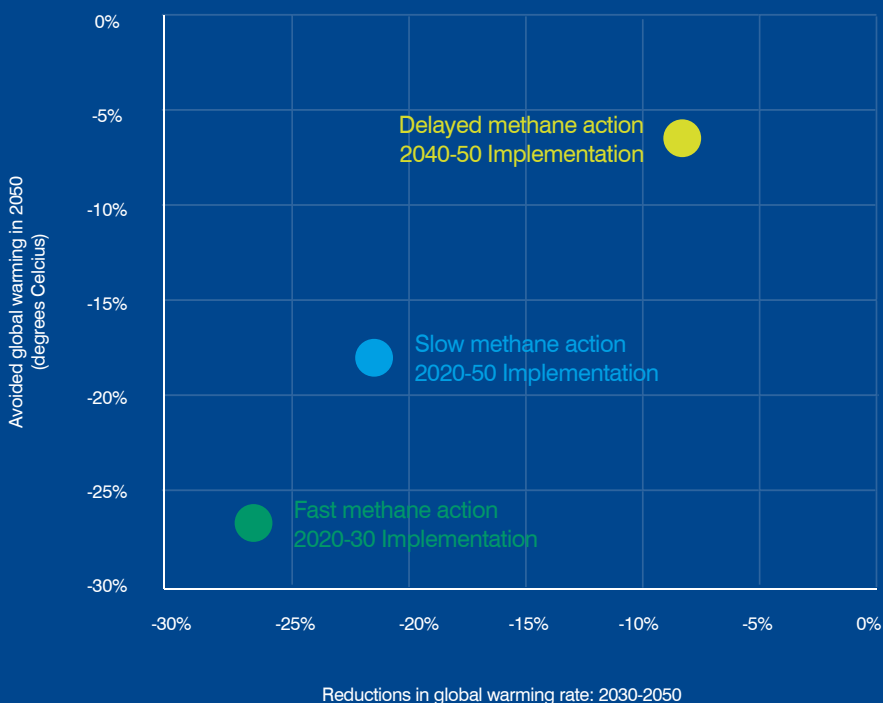
6 2022 IEA Global Methane Tracker

# The quick win: oil and gas methane

Decreasing methane emissions from all major sources – agriculture, energy and waste sectors – is important, but **reducing methane pollution from the oil and gas sector remains the fastest and cheapest opportunity to slow down the speed of global warming almost immediately.**

Directly cutting methane emissions provides more benefits by 2050 than methane reduced from fast decarbonisation – if we act now.

Near-term temperature benefits  
From technically feasible methane mitigation efforts



The relative roles of major sectors contributing to climate benefits from fast methane action vary greatly.



80% of no-cost actions come from the oil and gas industry

# Why EU action is the key to reducing emissions globally

As the world's largest natural gas importer, with 90% of its fossil gas consumption coming from outside its borders, the EU plays a significant role in driving methane emissions globally.

The EU can leverage this position to bolster its climate leadership and address emissions associated with gas imports by adopting a **methane emissions performance standard** for all gas consumed in the EU. Such a standard was described in [a joint policy brief by Environmental Defense Fund and the Florence School of Regulation \(FSR\)](#).

Based on [existing industry commitments](#), the FSR and Environmental Defense Fund 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 marketed). This approach is necessary to ensure methane reductions across the entire EU gas value chain.



# Industry action

According to the IEA, oil and gas companies can reduce 70% of their methane emissions with existing technologies, such as finding and fixing leaks, reducing flaring, ending venting etc.

Several European companies have already made commitments to reduce oil and gas methane emissions through the [Oil and Gas Climate Initiative](#) and/or stated their support for government policy and regulation, through the [Methane Guiding Principles](#).

## Methane emissions from the energy sector appear to be about 70% higher than reported in official data.

As identified by the IEA in the [2022 Methane Tracker](#), efforts to reduce methane emissions in the oil and gas sector have often been held back by a lack of reliable data. In fact, methane emissions from the energy sector appear to be about 70% higher than reported in official data.<sup>7</sup> To develop good quality data and catalyse action, UNEP's [International Methane Emission Observatory](#) (IMEO) will bring together scientific measurement studies, satellite data, industry reporting through the [Oil and Gas Methane Partnership](#) (OGMP 2.0), and national inventories.

<sup>7</sup> 2022 IEA Global Methane Tracker

Over 60 oil and gas companies have joined the voluntary OGMP 2.0 measurement and reported standards to increase the accuracy of their methane emissions reporting. The standard set by this framework should be enshrined as a baseline in the EU methane regulation; setting less stringent EU measures could encourage industry to reduce ambition.

Action on methane will become easier as new technologies improve our ability to gather better data on where emissions are coming from. For example, solar-powered lasers can pinpoint leaks and provide real-time data analytics to facility managers on mobile devices, while sensor-enabled drones can scan facilities for emissions.

Satellites such as [MethaneSAT](#) (a subsidiary of Environmental Defense Fund), which will be launched in early 2023, will detect and quantify methane emissions with precision and at a scale never before achieved. MethaneSAT is designed to generate global emissions data on a regular basis, which will enable both industry and governments to identify, manage, and reduce methane emissions.

