



Limiting the climate impacts of the European Union's gas supply

Key issues and opportunities in the 2020 European Gas Framework

In 2017 the EU consumed 47% of internationally traded gas, making it the single largest market for imported gas in the world. Even under the EU's 1.5 degrees C net-zero ambition, the European Commission expects gas to be part of the EU's energy system until 2050, albeit in an increasingly marginal role.

an effective way for the EU to raise its ambition, just when the issue has become so urgent.

According to the Intergovernmental Panel on Climate Change (IPCC), reducing methane is a necessary complement to reducing carbon dioxide emissions, the main driver of long-term warming.

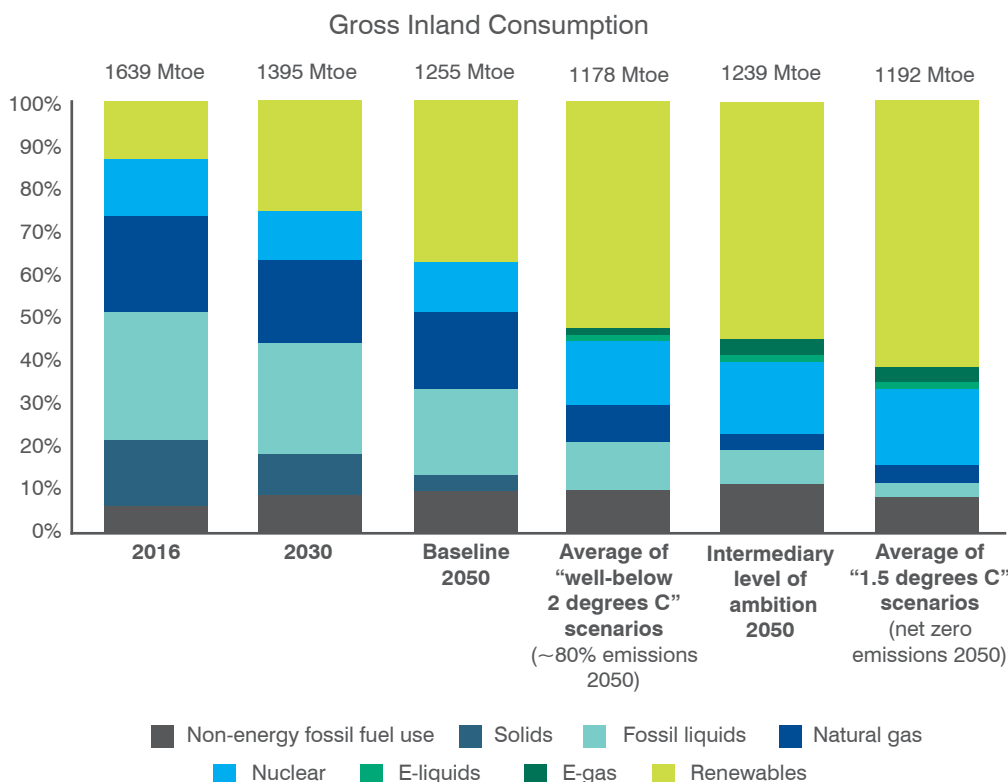
This means that for as long as gas remains a part of Europe's energy transition, it is vital for EU policy makers to consider a broad portfolio of options that can address methane emissions associated with gas production and use, while also ensuring that any gas coming into the EU meets the Union's standards.

There is an opportunity for the EU's regulatory approaches to influence others through the "Brussels effect", where other countries track EU legislation to spare their companies the cost of following more than one set of rules. The upcoming reform of the 2020 European Gas Framework represents a significant opportunity for the EU to put climate at the core of its energy policy and diplomacy, setting positive examples for other major gas importing countries such as China, Japan and Korea to follow.

Methane is 84-87 times more potent than carbon dioxide (CO₂) in the first twenty years after release, meaning it largely dictates how fast the planet warms. Reducing oil and gas methane emissions is

Table 1: Fuel mix in gross inland consumption
(In million tons oil equivalent)

"Carbon dioxide dictates how warm our planet will get — methane determines how fast. Both require attention."
Steven Hamburg
EDF Chief Scientist



Source: COM (2018) 773 final

Why oil and gas methane matters

Methane is responsible for at least 25% of the global warming we experience today. The oil and gas industry is one of the largest human-caused sources of methane, alongside agriculture and waste, producing about 25% of global anthropogenic methane emissions.

Fortunately, oil and gas methane emissions represent some of the quickest and most affordable options to reducing methane. According to the International Energy Agency (IEA), the oil and gas industry can achieve a 75% reduction in methane emissions with current technologies – and up to two-thirds are achievable at no net cost.

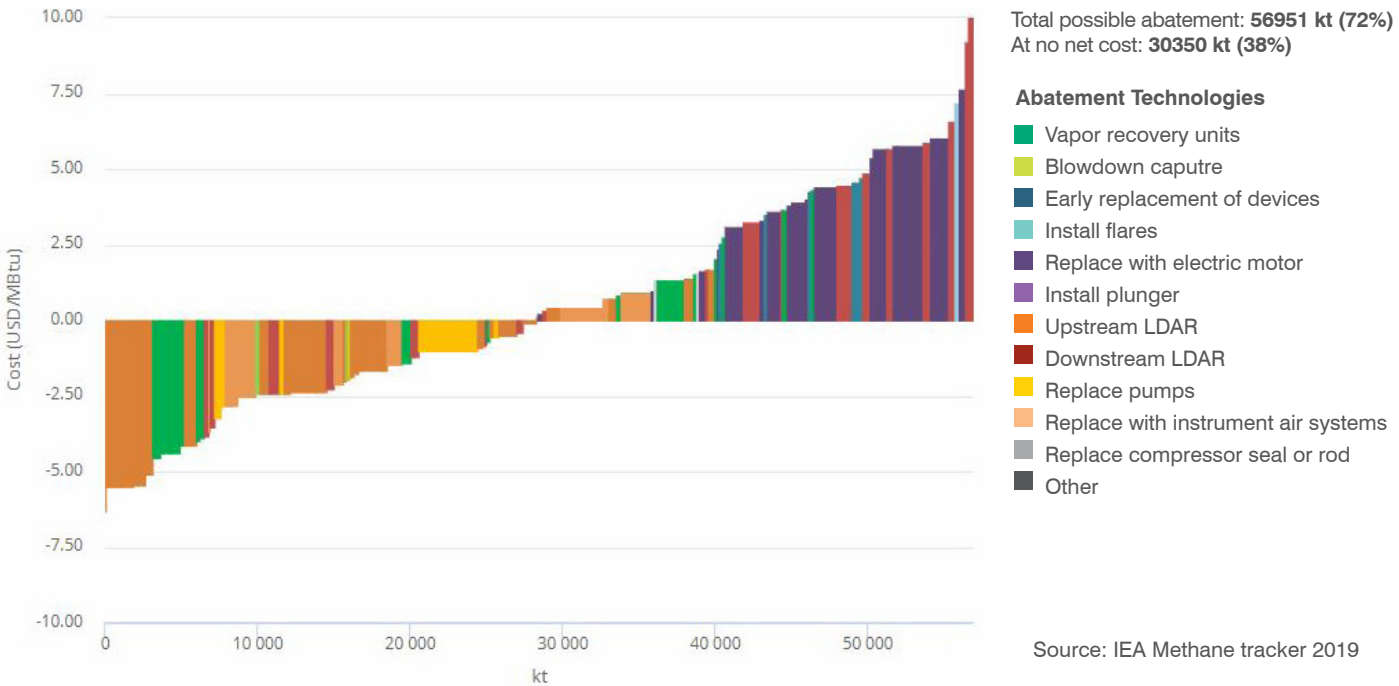


Oil and gas facilities in Romania were the focus of new research conducted in 2019 to learn more about Europe's methane emissions.

“We have the cost-effective technologies to solve the methane problem: solutions are relatively simple — more plumbing than rocket science.”

– Poppy Kalesi, Director of Global Energy for Environmental Defense Fund

Table 2: Estimated global oil and gas sector methane abatement potential (2017 estimate)





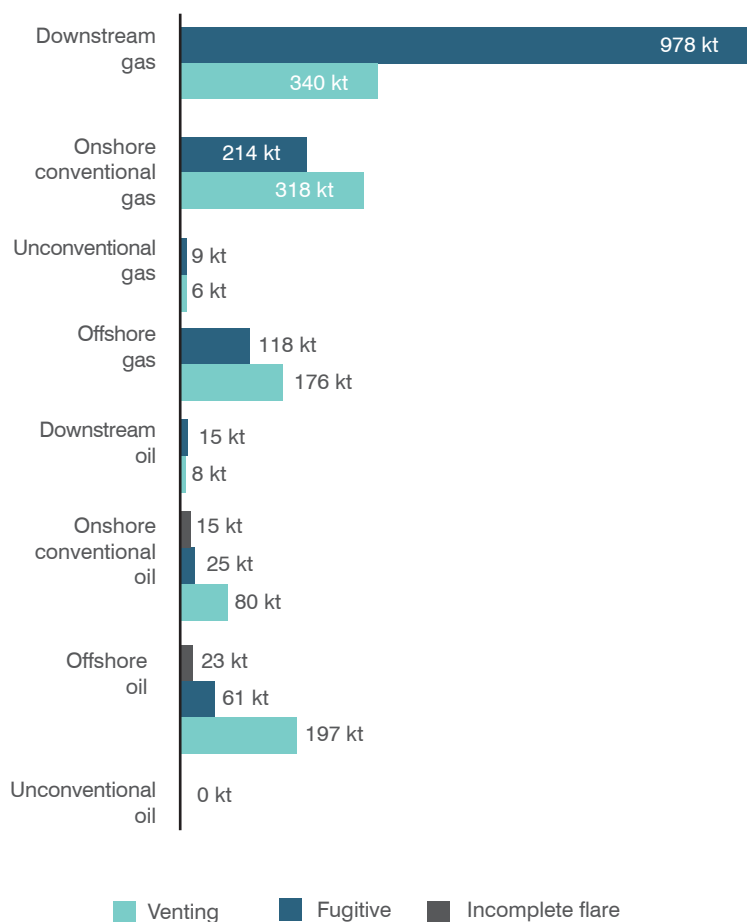
Why Europe matters

As a major consumer of natural gas, the EU plays a major role in driving global oil and gas methane emissions. According to the IEA's methane tracker, EU domestic methane emissions from the oil and gas sector account for 3.3% of global methane emissions from that sector (Table 3).

It should be noted that global emissions inventories are highly inaccurate and often have a significant bias which lowers reported emissions. For example, an Environmental Defense Fund-led collaborative study published in the journal *Science* found oil and gas companies alone emit 13 million metric tons of methane a year in the US, nearly 60% more than government estimates.

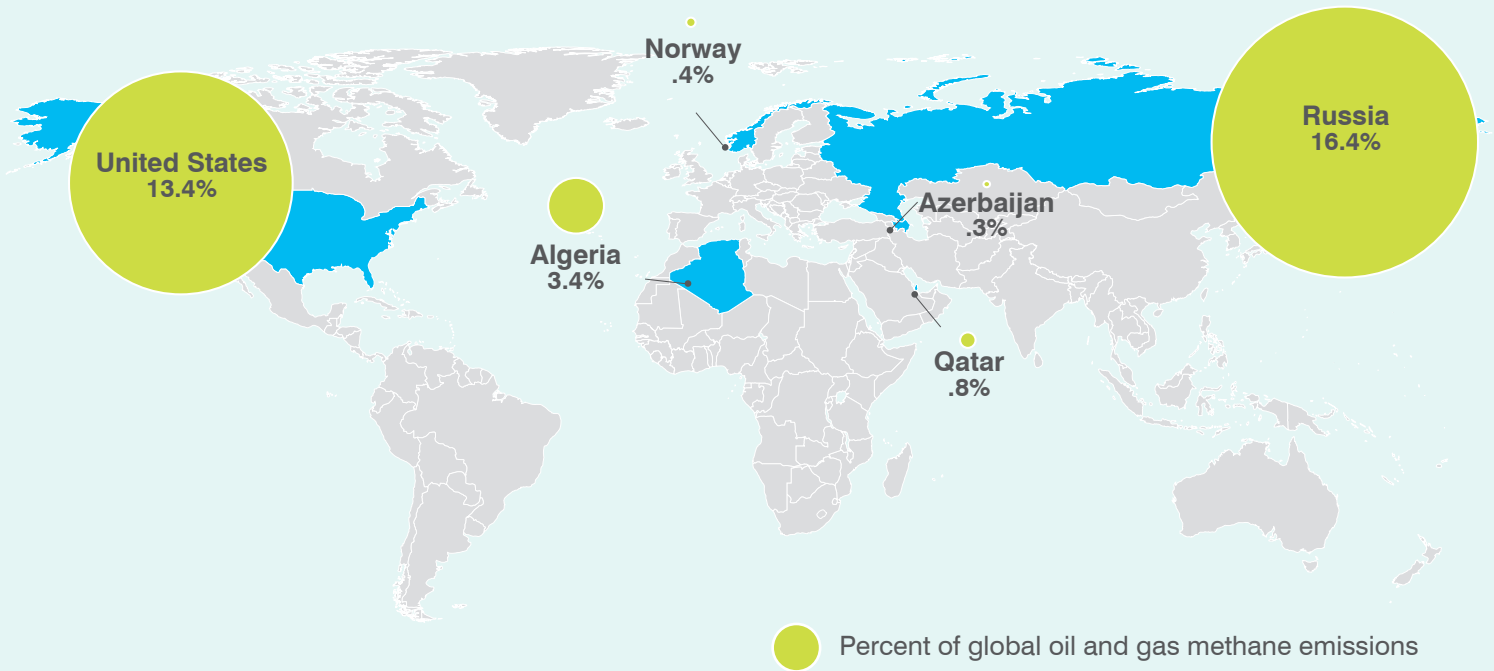
Additionally, the numbers reported for gas production and use in Europe do not account for the methane footprint of the gas imported into the EU (Table 4). Taking this into account, the size of the EU's total contribution to global oil and gas-related methane emissions is therefore significantly larger. The EU's reliance on imported gas is growing. Europe's dominant global market position can and should leverage action among the biggest energy suppliers.

Table 3: Europe oil & gas methane emission estimates (2017 estimate)



Source: IEA Methane tracker 2019

Table 4: Methane emission estimates for major gas exporters to the EU
(2017 estimate)



Source: IEA Methane tracker, 2019

Many of the world's largest oil and gas majors are headquartered in Europe, and the standards and operating practices they are required to follow in their home market influence global practices through their many joint ventures and partnerships. 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.

Company leadership is important as the European Commission considers other ways to reduce oil and gas methane emissions. Based on the extensive experience Environmental Defense Fund has on this issue and the methane standards we have seen take shape in jurisdictions worldwide, the EU can and should take a strong regulatory approach to align with global best practices.

The EU can and should take a strong regulatory approach to align with global best practices.

EDF's key policy asks for the EU gas market reform:

Ensure that all gas produced, imported and used in the EU complies with strict methane emission control requirements.

The EU should make clear to producers both inside the Union and in third countries that managing upstream methane emissions will be a requirement for gas placed on the EU internal market.

Some of the legally binding measures to ensure that all gas produced, imported and used in the EU complies with strict methane emission control requirements could include:

- Establishing a robust EU benchmark and MRV process (Measuring, Reporting, Verification) to address lifecycle emissions of all gas sold in the EU.
- Obliging all gas, both imported and domestic, to be certified.
- Reviewing the Gas Quality Directive so that the climate impact of methane emissions is treated on an equal footing with health and safety.
- Developing common network tools between European and third country regulators and system operators including methane benchmarks and interactive data exchange.
- Creating an EU definition of “entry point” to track and publish volume discrepancies between gas entering the system (through the ‘first point of entry’) and exiting.

In the run up to imposing an EU performance standard for methane, the EU could also develop incentives whereby shippers who are able to demonstrate that they have taken adequate measures to source gas from responsible producers will be given some form of preferential treatment within the EU. Indeed, there is precedent for this in how power plants meet the EU CO₂ Emissions Performance standard, which qualify for capacity mechanisms, and biofuels comply with sustainability standards.

Capitalise on science and technology to help us improve the measurement and monitoring of methane emissions.

Obtaining data is critical to understanding where methane leaks occur and why. Solid data will lead to solid and workable legislation.

Technology can help determine the severity of the methane emissions problem and pinpoint “hotspots” that most need to be addressed. For example, the TROPOMI instrument and Sentinel 5 satellite are already in orbit, monitoring global methane emissions. In addition, by providing reliable, fully transparent data on a worldwide scale, MethaneSAT will help transform a serious climate threat into a climate opportunity by offering a window into quantification and detection of methane sources.

The EU should use the gas market reform to ensure the following:

- Adequate funding to continue long-term background ozone and methane observations.
- Measurements of methane emissions from the oil and gas system at different scales.
- Support for top-down approaches to provide valuable information in terms of (i) assessing the overall magnitude of regional emissions (ii) identifying emission hotspots, and (iii) characterising spatial emission distributions.
- Support for facility wide measurements to improve bottom-up approaches of estimating emissions, which typically rely on multiplying activity data (e.g., number of wells) by emission factors (e.g., average emissions per well).

As technology and science evolves, it is important that EU policy makers and regulators focus on the desired outcome — lower methane and carbon dioxide emissions — whilst taking a flexible and dynamic approach to capitalise on the best available solutions and data.

Rather than aiming to set the perfect regulation now, it may be desirable to start with pilot projects and regulatory sandboxes to test proposed measures, before enshrining them into law.



For more information, contact:

Poppy Kalesi

Director, Global Energy, EDF
pkalesi@edf.org

[edf.org/eumethane](https://www.edf.org/eumethane)