



Potential ways the gas industry
can contribute to the reduction
of methane emissions

Coordinated by *gie* and **marcogaz**

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Introduction

GIE and MARCOGAZ, together with representatives from the entire gas chain, are committed to building a culture towards net zero methane emission.

Methane emissions management and reduction is top priority for the European gas industry.

The complete EU gas chain – from production to utilisation, including biomethane plants – is committed to reducing emissions and has supported the development of this report.

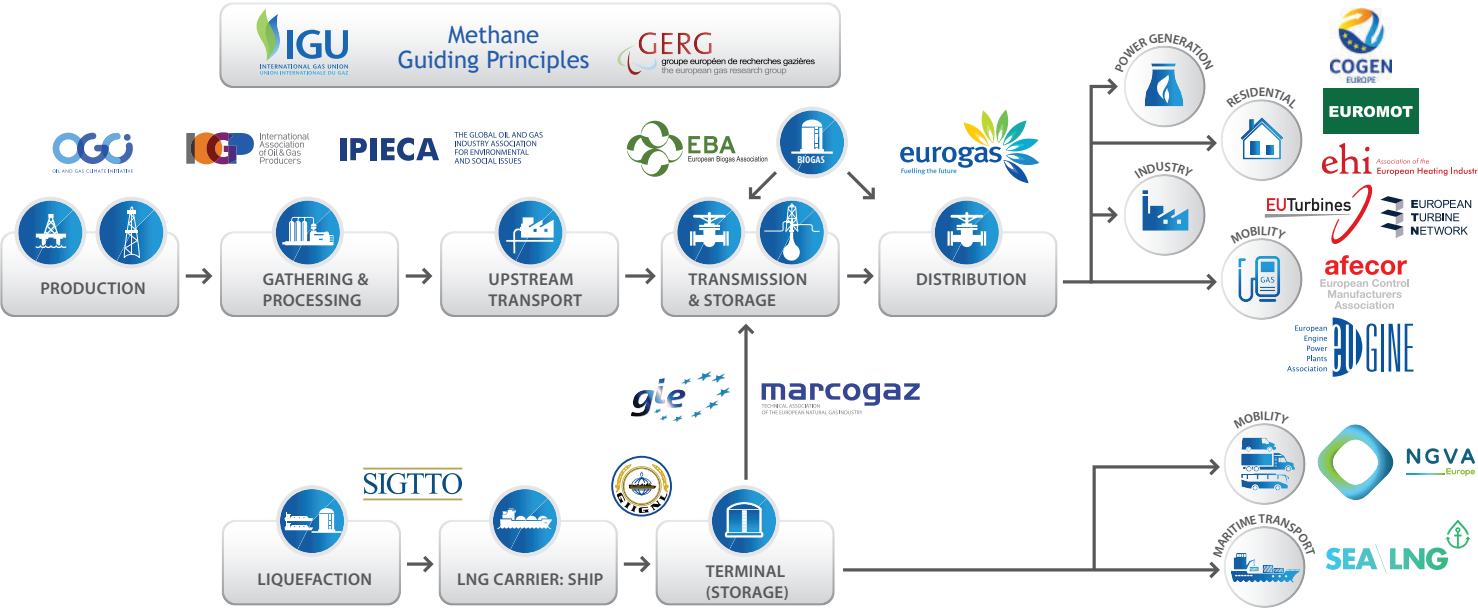
Why focus on methane?

The gas industry considers minimisation of methane emissions as an opportunity to actively contribute to short-term mitigation of climate change, accelerate environmental commitments and further enhance the environmental value of natural gas.

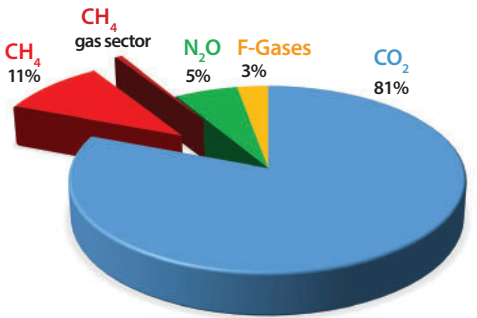
Methane is the second most abundant greenhouse gas (GHG) after carbon dioxide (CO₂).

Its greenhouse gas effect is significantly stronger in the short term, making it more potent in the short-term than CO₂. However, it has a shorter atmospheric lifespan - on average 8-12 years compared to CO₂ (which persists in the atmosphere for centuries).

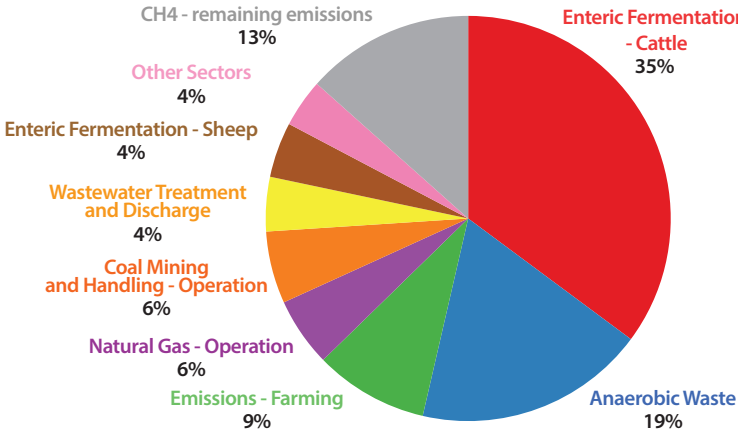
The following figures show the EU GHG emissions and the EU CH₄ emissions per source.



Total EU GHG emissions (in CO₂-eq)



CH₄ emissions per source



Source: Elaborated by the authors based on European Environment Agency GHG report

Why this report?

Regulation (EU) 2018/1999 on the Governance of the EU requires the European Commission (EC) to propose an EU strategic plan for methane, which will become an integral part of an EU long-term climate strategy to meet to the Paris commitments.

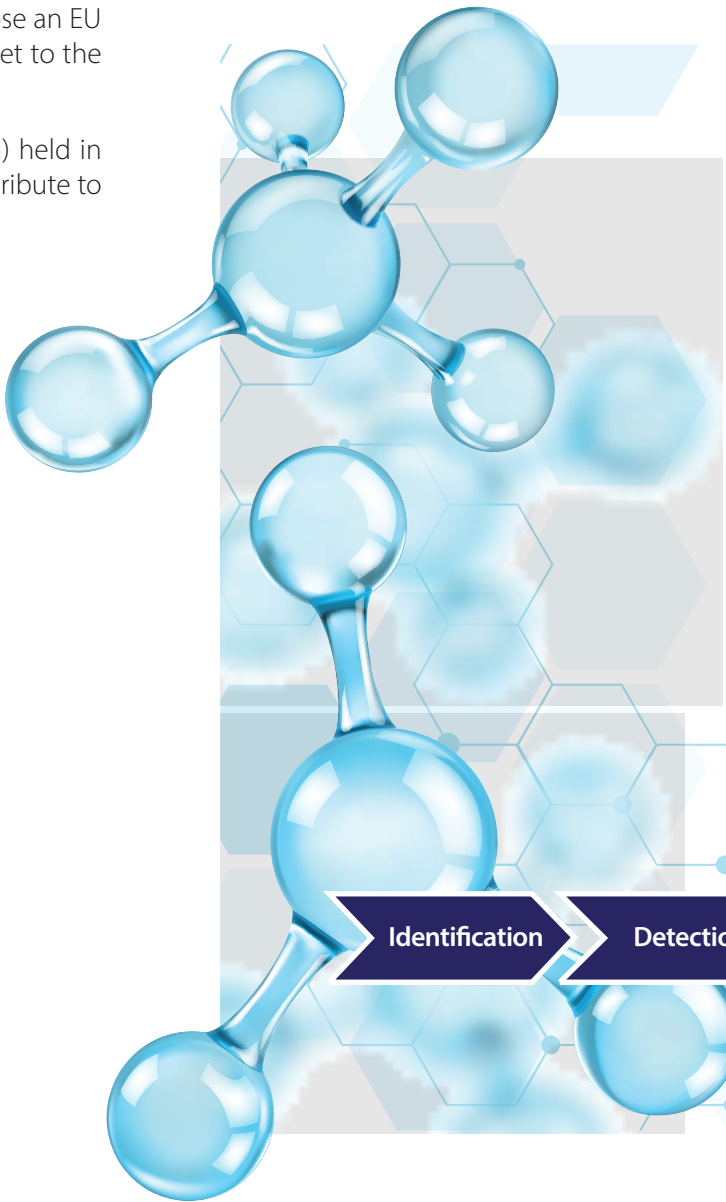
The Directorate General for Energy of the EC, at the 31st European Gas Regulatory Forum (Madrid Forum) held in October 2018, invited GIE and MARCOGAZ to investigate the potential ways that the gas industry can contribute to the reduction of methane emissions.



The report provides an overview of the current status of CH₄ emissions in the EU gas sector and the actions undertaken by the gas industry until now. The report contains also information on ongoing initiatives and proposed commitments for future actions for the industry.

Main findings

methane emissions is not a new topic for the gas industry



The gas industry has been working for many years to improve transparency and reduce methane emissions through mandatory and voluntary programs. Preventing gas leaks and methane emissions has always been a safety requirement since the start of the gas industry. However, there is still potential to further reductions of methane emissions by improving reporting and implementing additional mitigation measures.

The gas industry has established a systematic approach to identify, detect, quantify, report and verify its methane emissions. This is essential to close the current knowledge gap and enables prioritisation and efficient allocation of capital and human resources to target and mitigate methane emissions at the lowest abatement cost.



- The gas industry has different **tools and technologies** to detect and quantify methane emissions (such as Flame Ionisation Detector, IR cameras, drones, laser detectors and Hi Flow Sampling techniques).
- **Quantification** of methane emission is a complex task. However, the gas industry has worked on complementary approaches through a combination of measurement, calculations and modelling to fit each situation. It is important to reconcile top-down and bottom-up measurements, and taking into account important temporal factors.
- There is **continuous progress** in both science and technology to improve the accuracy of the methane emissions data.
- The gas industry has developed **reporting** methods to increase transparency and comparability associated to the reported data. In addition to the national inventory reports, a number of players report their own company emission inventories, including methane, through the associations' report and/or other reporting initiatives (MARCOGAZ, CDP, IOGP, IPIECA...)
- **Verification** and **validation** of methane emissions contributes to increased transparency and reduced data uncertainty. A range of reference standards, methodologies and frameworks related to emission control currently exist (including GHG Protocol, EN 15446, ISO 14064 and ISO 14001).
- There is a large number of best available techniques (**BAT**) available to reduce methane emissions that the gas industry is already implementing on a voluntary basis. Leak detection and repair (LDAR) programs are one such key instrument.
- **Innovation** on technologies and methodologies (such as drones, satellites and digitalisation) is key to the further detection and reduction of methane emissions.



GIE and MARCOGAZ
urge the gas industry to
continue making good progress
in quantifying and reducing
methane emissions and to
ensure that this is extended over
all parts of the gas chain.

GIE and MARCOGAZ
recommend to the gas industry
to focus on the implementation of best
available techniques and the development
of innovative technologies.

Increased knowledge, technology
developments and a drive for continuous
improvement will lead to further emission
reductions in the gas sector as well as other
economic segments such as agriculture,
waste and industrial processes.

The gas sector is fully committed

Many gas companies have voluntarily set emission reduction targets for the next years. These targets are an example of the commitment of the gas industry to achieve additional methane emission reductions.

In addition to individual company efforts there are several collaborative industry initiatives to improve understanding the scale of methane emissions, potential sources and opportunities for reductions. In some cases these initiatives also involve governments/ authorities, NGOs and academia.

GIE and MARCOGAZ ask all gas industry representatives to establish and communicate their emissions reduction targets soon.

GIE and MARCOGAZ recommend all participants in the gas sector to support and/or join these initiatives.

The most well-known of these include:

- the Methane Guiding Principles
- the Oil & Gas Climate Initiative
- Climate and Clean Air Coalition – Oil and Gas Methane Partnership.

The GIE and MARCOGAZ report provides an overview of these initiatives and includes a list of available reduction targets.



The gas sector is committed to remain the backbone of the low-carbon energy system through environmental leadership. Over two million kilometres of existing gas infrastructure will continue to provide competitive energy to EU industries and households.



GIE and MARCOGAZ join natural gas industry leaders to combat methane emissions

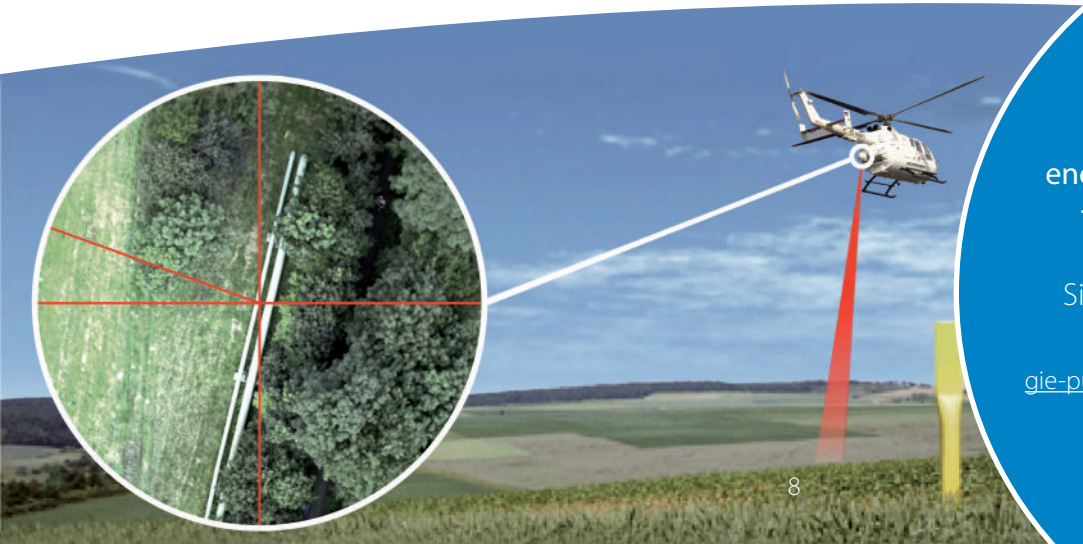
Methane Guiding Principles

GIE and MARCOGAZ have become Supporting Organisations to the Methane Guiding Principles, highlighting their commitment and increased focus on reducing methane emissions across the natural gas value chain.

The *Guiding Principles* were developed collaboratively by a coalition of industry, international institutions, non-governmental organisations and academics. The Coalition is formed by 30 signatories and supporting organisations, all of which are committed to a single clear goal of reducing methane emissions across the natural gas sector.

The Principles are:


- (1) Continually reduce methane emissions;
- (2) Advance strong performance across gas value chains;
- (3) Improve accuracy of methane emissions data;
- (4) Advocate sound policy and regulations on methane emissions
- (5) Increase transparency.



GIE and MARCOGAZ encourage their members to apply the Methane Guiding Principles.

Signed documents are available at:
<https://www.gie.eu/index.php/gie-publications/methane-guiding-principles>

What is next?

A photograph of three industrial workers in safety gear (hard hats, safety glasses, and gloves) reviewing documents on a gas facility. The worker on the left is a man wearing a green hard hat and safety glasses, holding a red clipboard. The worker in the middle is a woman wearing a blue hard hat and safety glasses, also holding a red clipboard. The worker on the right is a man wearing a green hard hat and safety glasses, pointing towards the right. They are all wearing blue work clothes. The background shows industrial equipment and structures.

GIE and MARCOGAZ encourage the gas industry to support the next steps and to join the action!

The report contains a set of recommendations, based on the identified list of challenges and gaps to reduce methane emissions along the EU gas value chain.

The main challenges are related to further harmonisation on methane emissions quantification and reporting. Dissemination of existing information, sharing data and knowledge are essential to facilitate the process of improving the data and accuracy and to understand the scale of the issue. Further awareness, transparency and incentives could motivate the setting of targets which will have an immediate impact on the quality of the reporting and on the reduction of the methane emissions.

GIE and MARCOGAZ will focus the next steps on the development of an action plan and on sharing the report findings via a series of dissemination activities and training programmes.



The gas industry is
committed to seize the
opportunity



Gas Infrastructure Europe

Gas Infrastructure Europe (GIE) is an association representing the sole interest of the infrastructure industry in the natural gas business such as Transmission System Operators, Storage System Operators and LNG Terminal Operators.

marcogaz
TECHNICAL ASSOCIATION
OF THE EUROPEAN NATURAL GAS INDUSTRY

MARCOGAZ is the representative body of the European Natural Gas Industry on all technical issues. We aim to monitor and take influence when needed on European technical regulation, standardisation and certification with respect to integrity and safety of pipeline systems, equipment, and the rational use of energy.

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**To download the full report,
please visit our website at:**

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