



gie
marcogaz

Methane Emissions

Activities of the European gas industry

Francisco de la Flor García

29th meeting of the EU - Russia Gas Advisory Council's

Work Stream on Internal Market Issues

21 of October of 2019, Berlin

Some publications questioning the future role of natural gas



Natural gas is a \$22bn distraction for EU shipping that won't decarbonise the sector – study

CAN THE CLIMATE AFFORD EUROPE'S GAS ADDICTION?

EUROPE'S CARBON BUDGET: NO ROOM FOR GAS

THE METHANE PROBLEM: LEAKING AWAY OUR CHANCES

The Guardian International edition

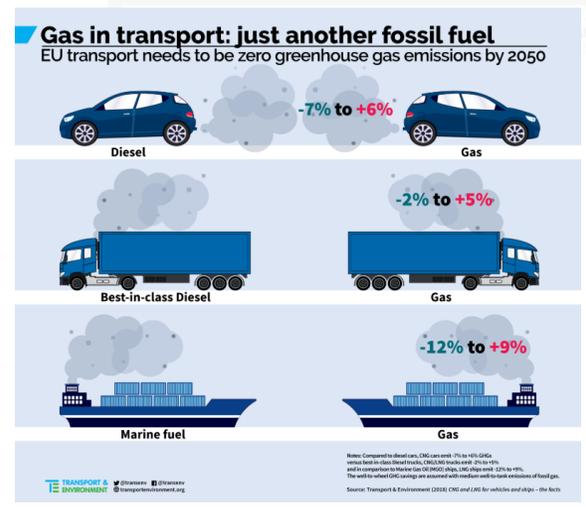
Fossil fuel industry's methane emissions far higher than thought

Emissions of the powerful greenhouse gas from coal, oil and gas are up to 60% greater than previously estimated, meaning current climate prediction models should be revised, research shows

HOME SEARCH The New York Times

ENERGY & ENVIRONMENT

Future of Natural Gas Hinges on Stanching Methane Leaks



Natural gas in vehicles – on the road to nowhere



Natural Gas Makes No Contribution to Climate Protection

Switching from coal and oil to natural gas accelerates climate change through alarming methane emissions

The Economist

Methane leaks

A dirty little secret

Natural gas's reputation as a cleaner fuel than coal and oil risks being sullied by methane emissions

The role of natural gas and biomethane in the transport sector

Ricardo Energy & Environment

UMAS

LNG as a marine fuel in the EU

Market, bunkering infrastructure investments and risks in the context of GHG reductions



Natural gas is not a 'bridge fuel', as claimed, but an expensive dead-end on the pathway to decarbonising transport.

The New Gas Boom

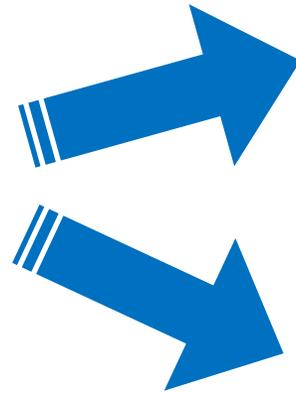
TRACKING GLOBAL LNG INFRASTRUCTURE

WORSE THAN THE COAL BOOM: MEASURING THE CARBON FOOTPRINT OF THE LNG BOOM

Overview on the current initiatives by Authorities



EU Governance Regulation 2018/1999
Article 16 - Strategic plan for methane



Conclusion of 31st Madrid Forum, October 2018

GIE & MARCOGAZ report on the potential ways the gas industry can contribute to the reduction of methane emissions

Tender: "Limiting methane emissions in the energy sector"

Methane Supply Index (indicator of methane footprint) of the gas supply corridors to the EU (Norway, Russia, North-Africa, LNG and in the future, the Caspian route)

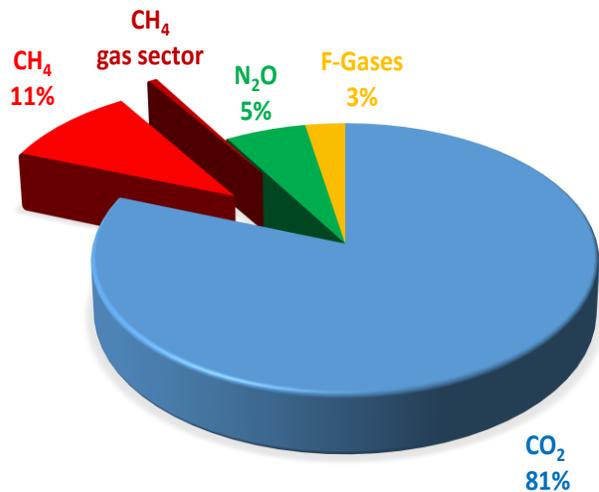


Climate Action Summit (UN)
New York, September 2019

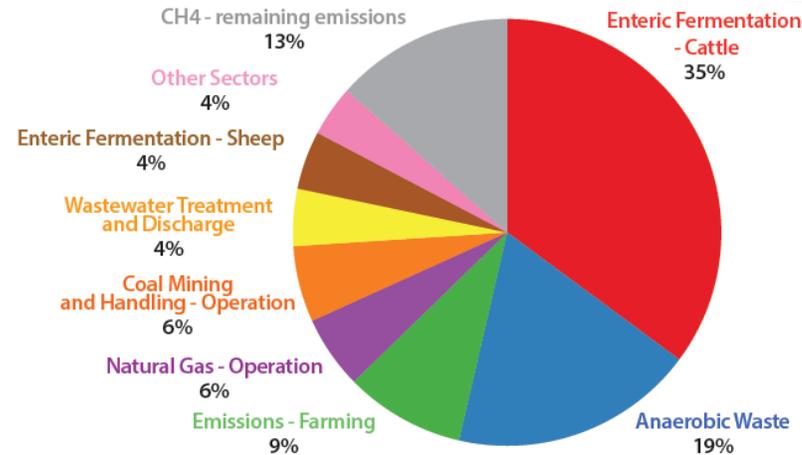
Given the scale of the challenge, the EC is exploring further ways to better measure and report methane emissions across all hydrocarbon industries and reduce methane emissions from energy production and use. There is still a significant potential to reduce emissions with low costs.

Current status of EU CH₄ emissions (data 2016)

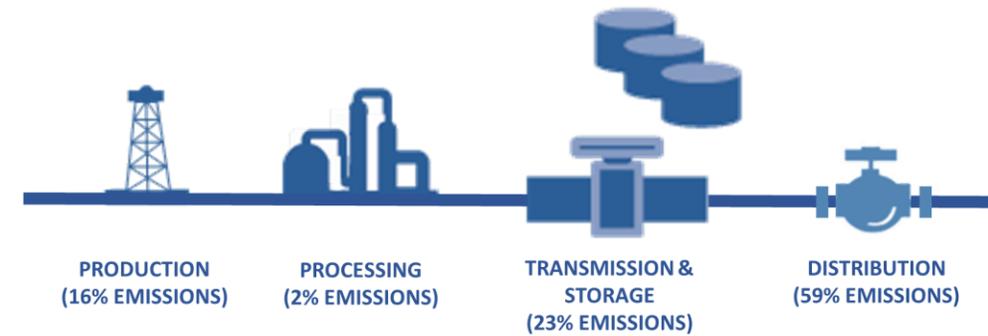
Total EU GHG emissions (in CO₂-eq)



CH₄ emissions per source



CH₄ emissions from EU natural gas operations



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

Organisation of the project



Terms of Reference

Terms of Reference
Joint proposal on potential way industry can contribute to the reduction of methane emissions

Background
During the last European Gas Regulatory Forum held in October 2018 in Madrid, the Forum invited GIE and MARCOGAZ to co-lead, with the support of the gas industry, the development on the way industry can contribute to the reduction of methane emissions in the gas sector.

Conclusion of 31st meeting of the European Gas Regulatory Forum, 16 - 17 October 2018, Madrid
The reduction of fugitive methane emissions in the energy sector is a prerequisite for the sustainable use of gases in the future energy mix. Therefore, the development of a common, robust measurement methodology and life-cycle based reporting of net methane emissions are necessary. The Forum invites GIE and Marcogaz to develop further on the potential way industry can contribute to these objectives and report back to the next Madrid Forum.

Over the last years the gas industry has recognized the importance of understanding methane emissions along the gas value chain. Several initiatives and studies have been undertaken to better understand the scale of losses, potential sources and opportunities for reductions. In addition, the gas industry is striving to further reduce methane emissions from their gas infrastructure, to implement good industry practices to achieve this goal and to improve transparency of emissions data. However, there is work to do to better understand losses in the gas value chain, standardize methodologies and improve transparency. This is important to support the future role of gas in a decarbonized future energy mix.

Objective
A report on current understanding within the gas industry to be presented during the next Madrid Forum that will take place on 2nd and 6th June 2019. The entire gas chain (from production to utilization) and all the types of methane emissions will be covered. The document will reflect the work done on this topic, the ongoing initiatives and projects (including next steps and timelines) and the identified gaps (proposals and recommendations will be included when possible) along the gas value chain. The work will be divided in 2 parts:

- Current understanding and initiatives
 - This first phase will describe the current situation of the gas sector, and particularly of the gas industry, regarding methane emissions. This will include:
 - Introduction to methane emissions

business cases and developments by and relevant stakeholders.

Reducing methane emissions
Methane emissions in the gas value chain and main stakeholders are:

• Gas production (including LNG campaigns)

• Distribution and data acquisition (including top-down methods to detect and quantify leaks)

• Utilization (including calculation, estimation or measurement)

• Storage (including measurement and monitoring in accordance with current and best practices)

• Processing (including the aggregated methane emissions from the gas value chain)

• Other (including the development of new technologies and the development of new standards)

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Project plan

	22/10/2018	29/10/2018	05/11/2018	12/11/2018	19/11/2018	26/11/2018	03/12/2018	10/12/2018	17/12/2018	24/12/2018	31/12/2018	07/01/2019	14/01/2019	21/01/2019	28/01/2019	04/02/2019	11/02/2019	18/02/2019	25/02/2019	04/03/2019	11/03/2019	18/03/2019	25/03/2019	01/04/2019	08/04/2019	15/04/2019	22/04/2019	29/04/2019	06/05/2019	13/05/2019	20/05/2019	27/05/2019	03/06/2019		
Presentation of the draft ToR	█																																		
Draft ToR to be circulated for comments																																			
Creation of a joint Task Force - Call for participants																																			
Kick-off meeting of the TF (8 November - 14:00-17:00)																																			
Approval of the ToR (GIE&MARGOGAZ)																																			
Structure and first version of the document with the main contents																																			
First workshop (17 January - Brussels)																																			
Preparation of a second version of the document based on the feedback received																																			
Second workshop (27 March - Geneva)																																			
Preparation of the third version of the document based on the feedback																																			
Peer review																																			
Approval of the document																																			
Final document and presentation																																			
Madrid Forum (5-6 June - Madrid)																																			

Peer review panel

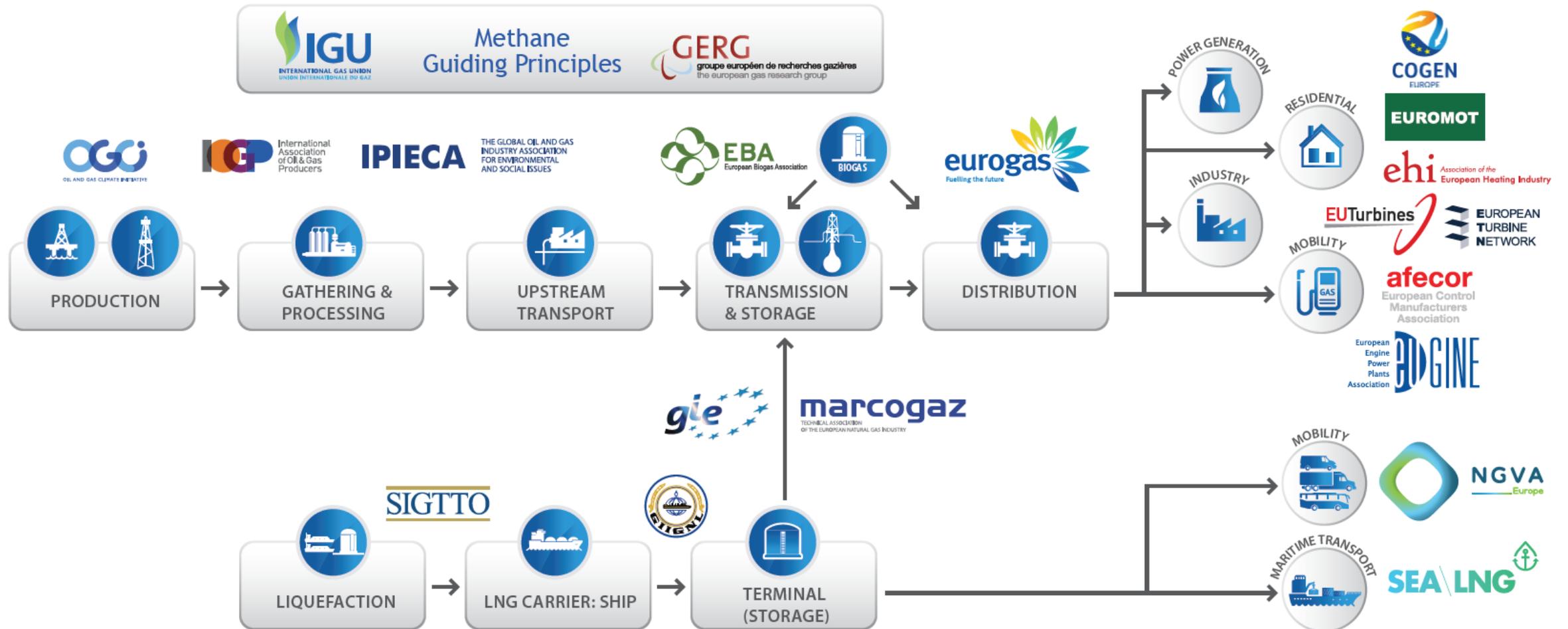


1st WS (Brussels) - Almost 50 participants representing 37 organizations covering the entire gas chain, from production to utilization, the EC and NGOs

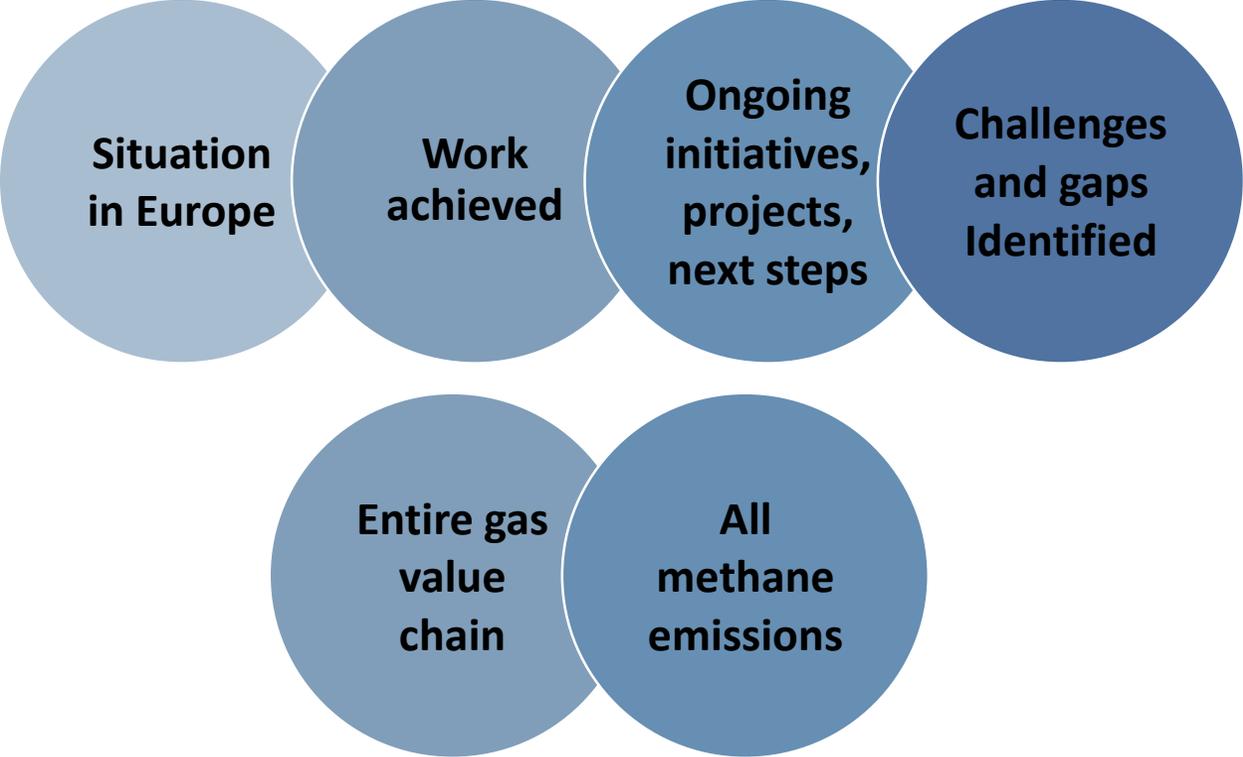
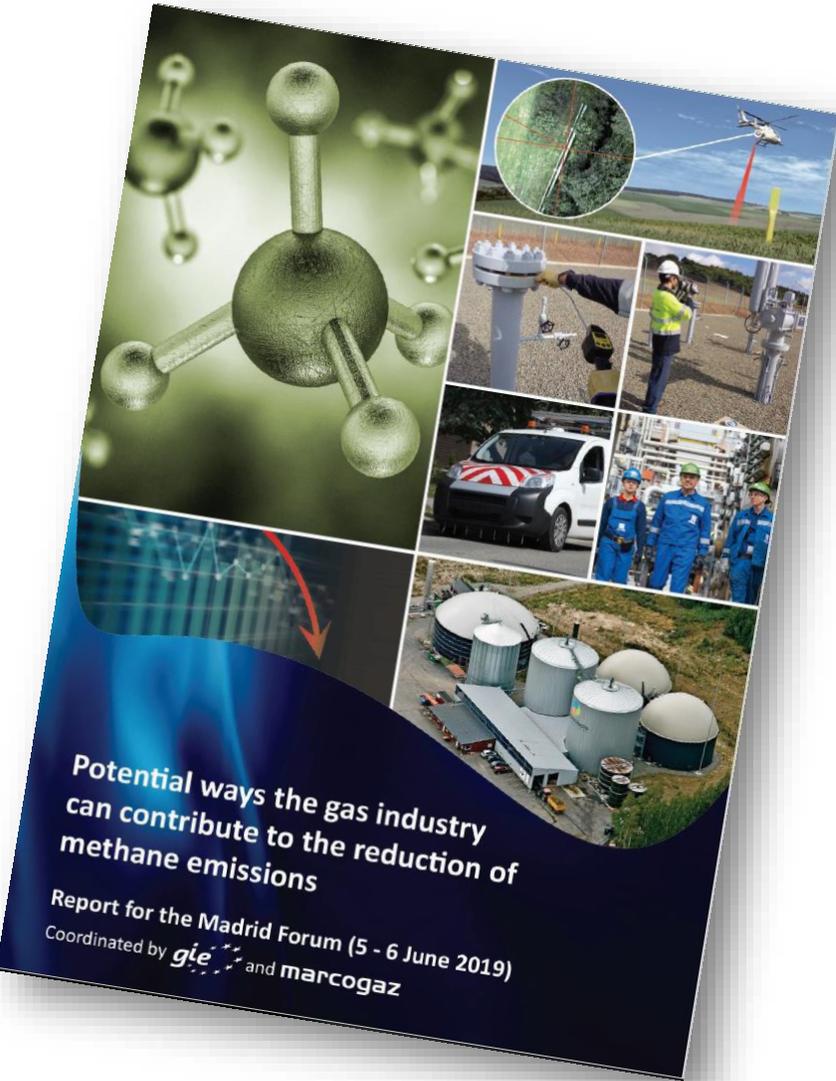
2nd WS (Geneva) – More than 90 participants representing gas industry, the EC, international institutions, NGOs and academics. Representatives from Third Countries

Report - Contributions from representatives of the entire gas chain

From production to utilisation, including biomethane plants



The role of the industry in reducing methane emissions



Report – Contents



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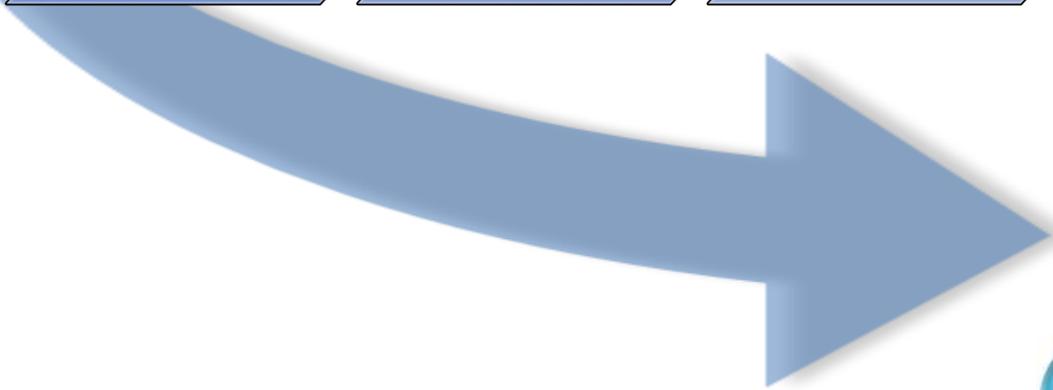


Report – Contents

Actions undertaken
by the gas industry
until now



**Methane
emissions is
not a new
topic for the
gas industry**



Including
Ongoing
Initiatives

Report – Contents



Tools and technologies

Continuous progress

BATs

Innovation

Collaborative Initiatives

Reduction targets

Report - Summary of existing activities

Production, transmission, LNG terminals, UGS and distribution	Type of emission		
	Fugitive	Venting	Incomplete combustion
Identification / Detection	LDAR-type programs involving use of IR cameras, sniffers, etc.	Equipment/process mapping	Equipment/process mapping
Quantification	Measured, calculated and/or modelled	Measured, calculated and/or modelled	Calculated and/or modelled
Mitigation	LDAR programs	Implementation of BAT	
Reporting	<ul style="list-style-type: none"> - Sustainability and carbon footprint reports (based on company inventories) - National Inventory Reports (to national authorities) - Partnership and associations methodologies (e.g. CCAC OGMP, OGCI, IOGP, IPIECA, MARCOGAZ) - Reporting initiatives (e.g. CDP, EDF) 		
Validation / Verification	According to GHG Protocol, EN 15446, ISO 14064, ISO 14001, ISO 50001, ISAE 3000. Verification of emissions often done by a third party		

- ✓ The systematic approach to identify, detect, quantify, report and verify emissions is essential to close the current knowledge gap and enable gas industry to prioritise and allocate capital and human resources to efficiently target methane emissions at the lowest abatement cost.

Gas industry initiatives

✓ Several collaboration initiatives (on voluntary basis).

✓ Gas industry contributes to increasing transparency via studies, research, analysis and initiatives, in order to overcome the uncertainty about CH₄ emissions.

After the report - Action plan



Dissemination activities and training programmes organise between GIE and MARCOGAZ based on the report

Brochure already published



First training programme will take place on 26-27 November in Vienna

Training session "Methane Emissions in the Gas Sector"
26th and 27th of November 2019 in Vienna

INTRODUCTION

The Energy Community Secretariat, GIE and MARCOGAZ, with the support of the Methane Guiding Principles, have the pleasure to invite your company to a training session "Methane Emissions in the Gas Sector". The session will take place on the 26th and 27th of November 2019 in Vienna at the Energy Community Secretariat premises (Am Hof 4, level VI).

The objective of training course is to provide high quality educational material and courses on EU policies related to methane emissions, ongoing activities at European level, methane science, methane reduction strategies and planning, measurement techniques, a guide to technology, disclosure and advice to get guidance and support. The programme will integrate and promote the Reducing Methane Emissions Best Practices (RMEBP) global toolkit which has been developed by the Methane Guiding Principles.

This training session has been designed for people with executive roles in the companies covering the area of methane management - and those reporting to or working in a team that advises the executive level on this topic - and who can disseminate the contents and messages to other company executives in order to embed them in the company culture. This training session can be attended without any cost¹.

TRAINERS

We have the pleasure to include trainers from the European Commission, the Imperial College London, GIE and MARCOGAZ.

OVERVIEW OF THE TRAINING SESSION

On successful completion of the 2-days Masterclass, participants will understand the following:

- The imperative need to reduce methane emissions and the opportunity to use best practices to address climate change.
- EU policies to reduce methane emissions and ongoing EU policy developments.
- Knowledge of the current and future regulation across other regions, as well as methane related emissions targets (voluntary and enforced).
- The main findings of the industry-wide study ([link to the report](#)) conducted by GIE and MARCOGAZ with contributions from representatives of the entire gas value chain from exploration and production through to utilization, including biomethane.
- Overview on the collaboration initiatives to reduce methane emissions.

Training session "Methane Emissions in the Gas Sector"
26th and 27th of November 2019 Energy Community Secretariat premises - Am Hof 4, level VI, Vienna

TRAINING PROGRAMME

DAY 1 - INTRODUCTION TO THE METHANE GUIDING PRINCIPLES INITIATIVE

9:00 - Arrival and welcome coffee
10:00 - Welcome address
10:30 - Introduction to the Methane Guiding Principles Initiative
11:00 - Introduction to the course
11:15 - Key developments in methane regulation
12:30 - Lunch break
13:30 - Understanding Methane Emissions in Gas Supply Chains
14:00 - Introduction to the report 'Potential ways the gas industry can contribute to the reduction of methane emissions'
14:45 - Decision and quantification of methane emissions, Technologies and Innovation
15:15 - Reporting of methane emissions, Validation and verification
16:45 - Coffee break
17:00 - Closure of the day

Training session "Methane Emissions in the Gas Sector"
26th and 27th of November 2019 Energy Community Secretariat premises - Am Hof 4, level VI, Vienna

TRAINING PROGRAMME

DAY 2 - METHANE GUIDING PRINCIPLES - OUTREACH PROGRAMME

9:00 - Arrival and welcome coffee
9:30 - Short introduction
9:35 - The Methane Emissions Reduction Business Case
9:45 - Introduction to the Reducing Methane Emissions Best Practices - Overview
10:00 - RMEBP and Case Study: Venting
10:30 - RMEBP and Case Study: Flaring
11:00 - RMEBP and Case Study: Equipment Leaks
11:15 - RMEBP and Case Study: Operational Repairs
11:35 - Interactive session: Methane mitigation decision-making: the RMEBP Cost Model
14:00 - RMEBP and Case Study: Energy Use
14:30 - RMEBP and Case Study: Engineering Design and Construction
15:00 - RMEBP: Continual Improvement
15:30 - Interactive session: Methane management in process: the RMEBP Gas Assessment Tool
16:00 - Closure of the training programme

Dissemination activities:

- ✓ Madrid Forum
- ✓ IGU Committees
- ✓ GasNaturally WS
- ✓ EGATEC 2019
- ✓ ...

After the report - Action plan

AROUND 60 MAIN ACTIONS



Standardisation & Measurement

Challenges and gaps	Actions (timing)
Awareness and knowledge on the methane emissions topic	<ul style="list-style-type: none"> Educational toolkit under development by Methane Guiding Principles (<i>by the end of 2019</i>) Educational Outreach Programme under development by Methane Guiding Principles (<i>by the end of 2019</i>) OGCI outreach to national oil & gas companies (NOCs) on BAT implementation with (<i>ongoing</i>) OGCI engagement in downstream activities (<i>ongoing</i>) Organisation of workshops for EU gas industry to share information on the main findings of the (present) GIE and MARCOGAZ report, ensuring involvement of all EU countries and utilisation (<i>end of 2019 / beginning 2020</i>) IPIECA Methane mapping tool (<i>2019</i>)
Fragmented initiatives along the gas value chain	<ul style="list-style-type: none"> Gas operators seeking guidance to address methane emission reduction and urge the associations to take an active role in the global initiatives (<i>ongoing</i>)
Aggregation of methane emission data along the EU gas value chain	<ul style="list-style-type: none"> EU gas associations to work jointly on a proposal, including units (<i>TBD¹⁰</i>)
Proper allocation of methane emissions to oil & gas chains	<ul style="list-style-type: none"> Oil & gas producers to explore possible methodologies related to the allocation of methane emissions (<i>TBD</i>)
Harmonised definitions along the EU gas value chain	<ul style="list-style-type: none"> EU gas associations to collaborate based on the IPIECA Glossary (<i>TBD</i>)

Awareness

Challenges and gaps	Actions (timing)
Harmonised reporting	<ul style="list-style-type: none"> Methane common reporting template developed by Methane Guiding Principles (2019-2020) European voluntary system for control of methane emissions will be developed by EBA (<i>TBD</i>)
Reporting	<ul style="list-style-type: none"> Improve accuracy and transparency of national inventories Improvement of harmonised quantification methodologies and gathering measured data Reconciliation of bottom-up and top-down approaches Improvement of companies' inventory data Knowledge and data on utilisation
	<ul style="list-style-type: none"> Coordination between the gas industry and national authorities to improve quality of data. NIR should be based on Tier 3 approach for the entire gas chain in the future. (<i>TBD</i>) CCAC Methane Science Studies, in collaboration with UNECE, EDF and OGCI (<i>ongoing</i>) MARCOGAZ pre-standard for transmission and distribution related to identification and quantification (<i>2019</i>) Collaboration between NGOs, industry and academia will lead to further reduction of uncertainty between methodologies (some ongoing CCAC Methane Science Studies, but more work in this area is required) (<i>TBD</i>) Verification and validation of emissions according to reference standards (<i>TBD</i>) Ongoing projects (<i>2019 & 2020</i>)

Challenges and gaps	Actions (timing)
Mitigation	<ul style="list-style-type: none"> Limited financial and economic incentives (in some cases) to put in place mitigation measures Establishment of methane emission reduction targets at company level Employees engagement on methane emission reduction Dissemination of BAT information Innovation on technologies
Missing cross sectorial opportunities and exchange of views (i.e. innovative technologies, BATs) aimed at the reduction of methane emissions	<ul style="list-style-type: none"> Gas industry to do cost/benefit analysis Incentives from Authorities Gas companies, who don't have it yet, to consider the establishment of reduction targets Once gas companies establish reduction targets, to evaluate the possibility to set up performance remuneration for the employees Analysis of the most efficient BATs Gas industry to take part of the outreach programmes and participate in GIE and MARCOGAZ workshops OGCI (Climate Investments) initiative "Towards zero methane emissions" Creation of an industry/cross-sectorial Forum/Platform bringing together different EU sectors responsible for methane emissions and representatives of non-EU companies/organisations.
Methane emissions data of natural gas imports	<ul style="list-style-type: none"> Enhance the collaboration with non-EU companies (suppliers)
Potential overlapping with existing EU and national regulation on methane emissions	<ul style="list-style-type: none"> Analysis of EU and national regulation, including its impact (gas industry to support this action). (<i>TBD</i>)

Mitigation & Reporting

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

Thank you.

