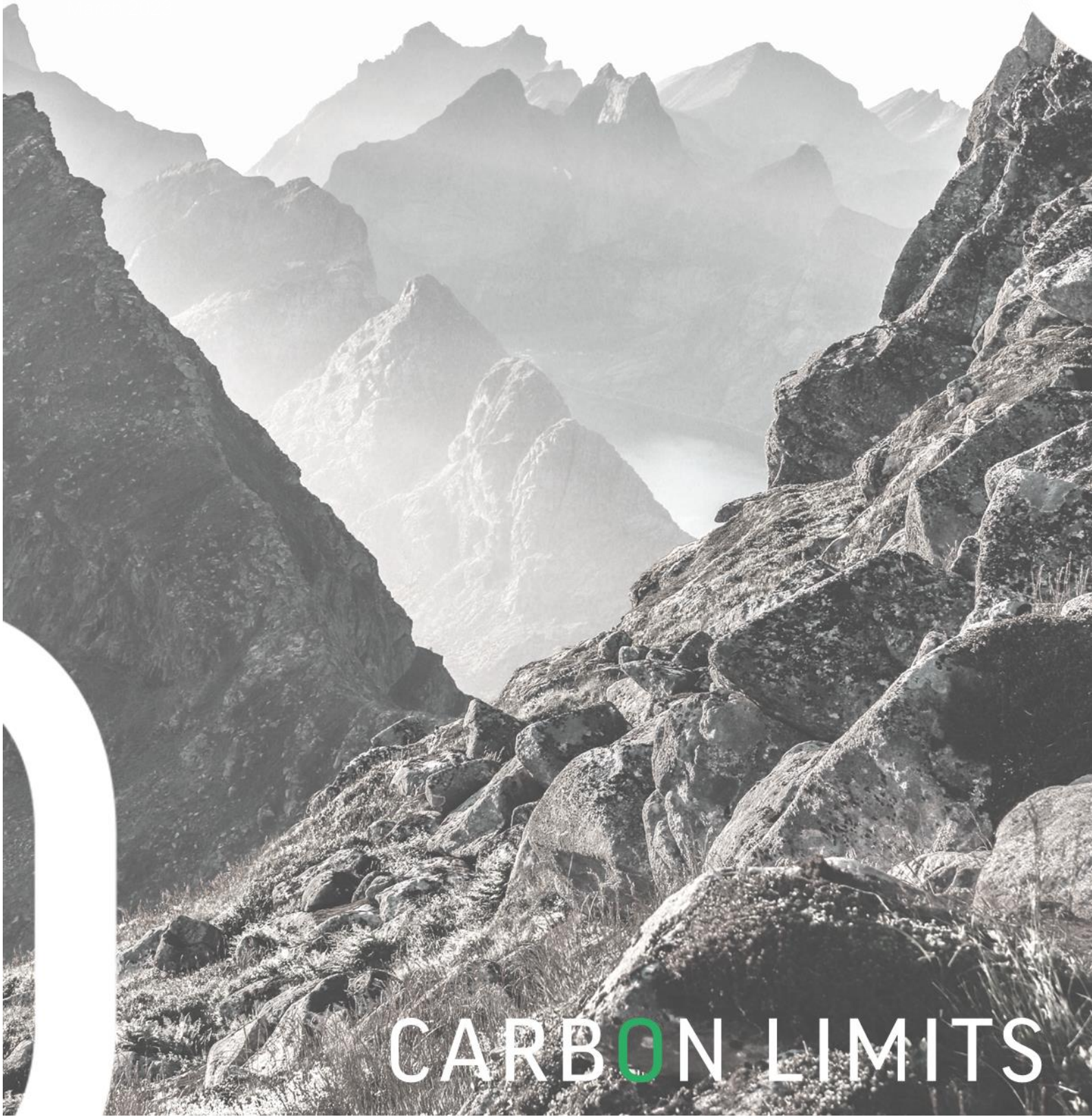
Roadmap for the Development of an EU Methane Import Standard



CARBON LIMITS

This report was prepared by Carbon Limits AS for Clean Air Task Force (CATF)



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Carbon Limits works with public authorities, private companies, finance institutions and non-governmental organizations to reduce greenhouse gas emissions from a range of sectors. Our team supports clients in the identification, development, and financing of projects that mitigate climate change and generate economic value, in addition to providing advice on the design and implementation of climate and energy policies and regulations.

Disclaimer

This document was developed to present potential ways forward on the complex topic of developing an EU methane import standard. It does not aim to prescribe any way or present it as the only answer to the implementation of a methane import standard. Alternative solutions exist and could be developed and implemented for the challenges presented throughout the document. As a roadmap is always narrower than the reality, it can also be expected that several challenges have been overlooked or presented as future work at this stage.

This report does not reflect the views of Carbon Limits. The conclusions presented in the report summarize the overall findings of the discussions between stakeholders and may not reflect the individual viewpoints of the stakeholders or their affiliated organizations.

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Foreword

CLEAN AIR TASK FORCE

Recently, prior to the publication of this report, the European Parliament agreed to support the first import standard on oil and gas brought into the EU. In its bold position on the Methane Regulation, Members of the European Parliament overwhelmingly voted to support regulating upstream methane emissions, taking the first steps to hold the EU accountable for the methane emissions associated with the oil and gas consumed in the EU, but emitted elsewhere.

As with the *first* of anything, there are many who say it simply cannot be done. This report aims to show that while achieving an import standard may not be easy, one thing is clear: there are no insuperable legal obstacles to establishing an import standard for oil and gas imports to the EU. This is apparent from the various precedent approaches establishing import standards set under other EU legal frameworks, as well as the rules of the World Trade Organization (WTO), the international climate change regime under United Nations Framework Convention on Climate Change (UNFCCC) and the Paris Agreement and the science that informs these regimes.

There are, nevertheless, various options on the table to execute an import standard – each with their own advantages and disadvantages. Here we present a prescriptive standard – regulating practices and technologies for energy producers abroad – that represents, according to us, the bare minimum in terms of ambition, however, it excels in that it applies equally to both oil and gas imports.

Conversely, an intensity standard – regulating the amount of emissions per amount of gas imported – could present a more ambitious set of requirements, but due to the supply chain differences between the oil and gas sectors, a comprehensive intensity standard requires separate considerations for both oil and gas. It is important to note that due to the limitations of this workshop and report, the intensity standard proposed applies only for gas imports. It will be essential to develop a separate but complementary standard for oil in the near future to achieve an implementable intensity standard.

With the European Parliament proposing in its position both a prescriptive and intensity standard for the European Commission to take forward, this report aims to provide further clarity on how each option could be implemented and what aspects require further investigation. It is also important to note that the ideal policy outcome could be something that utilizes both prescriptive measures and intensity standards, for example a ban on venting and flaring, and strong MRV combined with intensity standards for both oil and gas. This hybrid approach is not outlined in this paper.

Jonathan M. Banks

Global Director, Methane

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Abbreviations

bcm	Billion cubic meters
CATF	Clean Air Task Force
CBAM	Carbon Border Adjustment Mechanism
EF	Emission Factor
ETS	Emissions Trading System
EU	European Union
IEA	International Energy Agency
IMEO	International Methane Emission Observatory
IPCC	International Panel on Climate Change
kt	kilo-tonne
LDAR	Leak Detection and Repair
LNG	Liquefied Natural Gas
MARS	Methane Alert and Response System
MDL	Minimum Detection Limit
MRV	Monitoring Reporting and Verification
NGO	Non-Governmental Organization
OGCI	Oil and Gas Climate Initiative
OGMP	Oil and Gas Methane Partnership
ppm	Part per million
TBT	Technical Barrier to Trade
UNFCCC	United Nations Framework Convention on Climate Change
WTO	World Trade Organization

Executive Summary

Policymakers around the world are recognizing the need to drastically reduce methane emissions in parallel with carbon dioxide emissions.[1] As a participant of the Global Methane Pledge, the European Union (EU) pledged in 2020 to "lead the way globally to address methane emission reductions."[2] 90% of the gas consumed in the EU is imported from outside of its borders,[3] meaning that most of the methane emissions related to natural gas consumption in Europe are also emitted outside of its borders. Therefore, establishing a methane import standard will be beneficial in encouraging adoption of methane abatement best practices beyond EU's borders.

Methane emissions reduction is not a new topic in the EU. As part of the European Green Deal, the European Commission published in 2020 an EU methane strategy which presents cross-sector and sector-specific actions to decrease methane emissions in the energy, agricultural, and waste (and wastewater) sectors.[4] In December 2021, the Commission published a ***Proposal for the "Regulation of the European Parliament and of the Council on methane emissions reduction in the energy sector and amending regulation (EU) 2019/942"*** (hereafter referred to as the "legislative proposal") which transposes into law the EU's commitment to decrease methane emissions from fossil energy produced or consumed in the EU.[5] In December 2022, the EU Council adopted its general approach on the methane regulation[6]. At the time of the development of this roadmap[7], the European Parliament had not yet adopted its position on the regulation. It adopted its position in May 2023, in a major step forward towards the final result.

With official positions on the methane regulation now established by each of the three institutions, the Commission, the Council and the European Parliament will next meet in trilogue negotiations throughout 2023 to find a compromise that all parties agree upon. Once an agreement is found in trilogues, the agreed text will be enshrined in EU law. To this date, the **European Parliament has proposed an ambitious plan for applying methane abatement measures to fossil energy produced outside of and imported into the EU**. It introduced the world's first import standard, which would expand the scope of regulations to oil and gas being imported into the EU, and requires the Commission to adopt a methane intensity target of 0.2% for all suppliers.[8,9] Meanwhile, most of the methane abatement measures described in the Commission's proposal and the Council's approach only apply to fossil energy produced and transported within the EU. Actions beyond the EU borders are limited to setting importer requirements, the creation of a methane transparency database, and the development of a methane emitters global monitoring tool. Creating a methane import standard would thus be a way to extend the abatement measures to fossil gas produced outside of the EU

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[1] Global Methane Pledge, Retrieved from: https://www.globalmethanepledge.org/
[2] European Commission, *Communication from the commission to the European parliament, the council, the European economic and social committee and the committee of the regions on an EU strategy to reduce methane emissions*, 2020, Retrieved from: https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A52020DC0663
[3] European Commission, *Proposal for a Regulation of the European Parliament and of the Council on methane emissions reduction in the energy sector and amending Regulation (EU) 2019/942,* 2022.
[4] European Commission, *Communication from the commission to the European parliament, the council, the European economic and social committee and the committee of the regions on an EU strategy to reduce methane emissions*, 2020, Retrieved from: https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A52020DC0663
[5] European Commission, *Proposal for a Regulation of the European Parliament and of the Council on methane emissions reduction in the energy sector and amending Regulation (EU) 2019/942,* 2021. Retrieved from: https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=COM%3A2021%3A805%3AFIN&qid=1639665806476
[6] European Council, *Proposal for a Regulation of the European Parliament and of the Council on methane emissions reduction in the energy sector and amending Regulation (EU) 2019/942 - General approach*, 2022. Retrieved from: https://www.consilium.europa.eu/en/press/press-releases/2022/12/19/member-states-agree-on-new-rules-to-slash-methane-emissions/
[7] April 2023
[8] European Parliament, *Amendments adopted by the European Parliament on 9 May 2023 on the proposal for a regulation of the European Parliament and of the Council on methane emissions reduction in the energy sector and amending Regulation (EU) 2019/942 (COM(2021)0805 – C9-0467/2021 – 2021/0423(COD)),* Retrieved from: https://www.europarl.europa.eu/doceo/document/TA-9-2023-0127_EN.html
[9] Refers to Amendment 23 Proposal for a regulation Recital 31a. Currently there is no clarity on whether this 0.2% intensity applies to the entire value chain or individual segments. However, the Amendment refers to the Oil and Gas Climate Initiative (OGCI), which specifies the target of 0.2% for upstream activities. More clarity is required on the intensity targets planned for other segments of the gas value chain.

borders. A methane import standard would also be in line with European voter's perspectives, where there is a strong support for applying regulatory measures on EU oil and gas suppliers.[10]

To address the topic of an EU methane import standard, Carbon Limits and CATF conducted a "co-creating workshop" with a group of expert stakeholders to collect viewpoints on different aspects of the methane import standard. The workshop was organized in Madrid, Spain, on February 14, 2023, in which 29 stakeholders affiliated with more than 15 organizations participated.

Given the current regulatory proposals, one of the predominant recommendations from the stakeholders was for the **EU Commission to first initiate an EU methane import standard with a "prescriptive standard"**—one that dictates a set of practices and technologies that must be implemented or banned, based on the upcoming EU policy. As the prescriptive standard is established, **stakeholders recommended that the standard could eventually include a methane "intensity standard"** (emissions per amount of gas imported).[11] This recommendation is predominantly in line with the European Parliament's approach to the Methane Regulation.

This report describes a prescriptive standard for oil and gas imports into the EU and an intensity standard for gas imports only. The intensity standard presented here is focused on gas imports given that the discussions for the intensity standard during the stakeholder workshop were limited solely to this sector. Due to the significant impact of methane emissions caused by oil, we acknowledge that oil must be included in the development of a comprehensive intensity standard that can be used across the oil and gas sector, however due to the additional calculations required, these considerations were not fully addressed by the stakeholders.

A legal analysis of the regulatory proposals[12] in this report concluded that there are no insuperable obstacles to establishing any of the proposed import standards. This is having regard to: precedent approaches set under other EU regimes which establish import standards, the rules of the WTO, and the international climate change regime under the UNFCCC/PA.

Prescriptive standard

According to the stakeholders consulted, the standard should set requirements on: **1) monitoring, reporting, and verification (MRV); 2) Leak Detection and Repair (LDAR), and; 3) limitations on venting and flaring**. **This standard can be enforced using an equivalence principle**, meaning that exporting countries[13] should have the possibility to demonstrate that they have prescriptive requirements in place that lead to similar methane emissions intensity as the requirements set by the EU Commission. **The equivalence principle could also be extended to exporting companies** that can demonstrate methane management practices in line with the prescriptive standard. Since one company's practices may differ significantly from one region to another, the EU would have to determine in its procedures the most relevant scale for reporting, verification and equivalence assessment to ensure the companies have sufficient incentive to improve their practices across all oil and gas sites.

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[10] Clean Air Task Force, *Public Opinion of EU Methane Regulation*, 2022, https://www.catf.us/2023/04/european-citizens-from-france-italy-germany-and-poland-strongly-support-tough-regulations-to-reduce-methane-emissions/.

[11] The observations presented in this roadmap are a synthesis of discussions from the workshop and one-on-one interviews performed with the stakeholders. Stakeholders were divided into groups to discuss different topics, hence not all stakeholders participated in every discussion. Any reference to stakeholder agreement, recommendations and consensus refers to the conclusions that had the most weight and does not necessarily reflect the individual viewpoints of the stakeholders. Any conclusion statement and recommendations presented is also a synthesis of the findings and does not represent Carbon Limits' own views.

[12] Independent practitioners analysed the recommendations to the Proposed Regulation described in this document from a legal perspective and submitted a Joint Advice. *The practitioners summarized the* recommendations to the Proposed Regulation as*: (1) expand the requirements for MRV, LDAR, and venting and flaring to the full value chain, back to the point of production; (2) develop a robust and complete reporting and certification system for imports; (3) ensure that importers can use alternative measures, when comparable, and a system of regulatory equivalence; (4) by 2025 at the latest, propose a performance standard for imports.*

[13] In this report, exporting countries could be a country or states whom the EU methane import standard applies to. For simplicity, the phrase exporting country encompasses both the producing country/state and the final exporting country/state (transit) when they are different.

To determine equivalence, the stakeholders recommended that the **EU Commission develop a procedure to handle applications from exporting entities[14] and have a set of predefined criteria to assess if the practices in place can be granted equivalence**. The EU will have to determine which methodologies are suitable to demonstrate that equivalence. The equivalence assessment could be performed in collaboration with third-party verifiers.

To be effective, **the prescriptive standard could be associated with an incentive mechanism** to encourage market actors to comply with the standard. The main solution supported by the stakeholders was **to incentivize priority market access using a penalty system. Importers who import fossil hydrocarbons[15] from countries or companies that do not meet the standard, would need to pay a fee or a penalty.**

The implementation of a prescriptive import standard for oil and gas imports could incentivize a gradual improvement of global methane management practices and therefore lead to a decrease of emissions. However, stakeholders consulted believe an emission intensity standard could be added to further incentivize reductions beyond those achieved by prescriptive standard regulations.

Intensity standard

An emission intensity is defined as the quantity of emissions per quantity of product used. In this case, it would be the total methane emissions from different segments associated with natural gas production (including associated gas production)[16] divided by methane content of the natural gas throughput (including associated gas production).[17] **The emission intensity target represents the maximum level of acceptable emissions, meaning that gas having a higher emission intensity would not meet the standard.** The intensity target can be differentiated by segment (upstream, midstream, and downstream activities) or applicable to the full value chain.

One of the main actions highlighted by the stakeholders regarding the development of an intensity standard is the need to develop a robust **methodology/guidance for methane emissions quantification, reporting, and verification for exporting entities.** The stakeholders recommend that the methodologies at least cover:

- The scope and boundaries of sectors along the gas value chain, including a list of the emission sources that are to be quantified;
- The accepted methods for emissions quantification and the monitoring requirements that companies must meet, which could build on the MRV requirements of the prescriptive standard;
- How to account for emissions along the whole gas value chain, including transmission pipelines, LNG shipping, and liquefaction and regasification plants;
- How to account for and allocate methane emissions to gas in the case of associated gas production; and,
- The methodology for intensity calculation for imported gas.

To be in line with the Technical Barriers to Trade (TBT) Agreement of the World Trade Organization (WTO), stakeholders agreed that the EU would first need to set an intensity standard for gas produced in the EU before implementation of an emission intensity target standard for imported gas. The cost, impact and relevance of an emission intensity standard within the EU has not been evaluated as part of this project.

[14] In this report, exporting entities could be a country or states or companies whom the EU methane import standard applies to. For simplicity, the phrase "exporting entity" encompasses both the producing country/state/company and the final exporting country/state/company (transit) when they are different.
[15] Refers to oil and gas
[16] In case of associated gas production, the volume of marketable gas should be taken into consideration. Associated natural gas, is natural gas produced by oil wells. By contrast, non-associated gas is natural gas produced by natural gas wells.
[17] M.J. Bradley & Associates, NGSI Methane Emissions Intensity Protocol, Version 1.0, 2021. Retrieved from: NGSI_MethaneIntensityProtocol.pdf (eei.org). To be noted that

The EU Commission could, for example, use the industry's best practice targets as a starting point to develop its own targets. For instance, the Oil and Gas Climate Initiative (OGCI) 2025 target for upstream gas production is "well below 0.2%."[18]

If the reported emission intensity or the default EF is above the intensity target, the importer could be subject to an incentive mechanism for emissions that exceed the maximum. The proposed incentive mechanism that received the most support from stakeholders was to **apply a fixed fee per ton of methane above the target**.

When no emissions data is provided by exporting countries or companies, default emission factors (EFs) could be applied. The EU would need to carry out a benchmarking exercise to assign default EFs at country / state and/or regional levels for different segments and activities. The benchmarking should be based on scientific and internationally recognized data from sources such as scientific papers, satellite data, United Nations Framework Convention on Climate Change (UNFCCC), defaults from the International Panel on Climate Change (IPCC), and IEA data.

The development of verification methodologies would be a cornerstone of the standard and the verification in itself would likely be resource intensive. A transparent verification process would need to be established to assess and certify reported emissions. Aspects of verification are included in the Commission's proposal, to be discussed further at the trilogues. The verification process could typically rely on third-party verifiers accredited by the EU member states. A set of requirements that independent parties should meet to qualify as verifiers would also need to be developed. However, it is to be noted that methane emissions are more challenging to quantify than other greenhouse gases (GHGs) such as CO_2. Methane emissions can vary significantly over time and there are no typical direct correlations between an operational parameter and site- or even source-level emissions (*e.g.* fuel consumption for CO_2 emissions). Therefore, verification would likely imply a thorough review of a number of parameters, data points, processes and calculations, as well as a certain level of understanding of methane emissions via measurements, in order to provide an assessment that goes beyond an assessment of the reported values for methane emissions.

The fees collected from imported oil and gas that do not meet the intensity standard could be used for creating an EU methane fund, managed by the EU Commission. **The EU methane fund could be used for methane emission mitigation in the oil and gas sector abroad**. This fund could be invested in capacity building activities, implementation of MRV programs, and other methane abatement projects. The fund should particularly target projects in developing countries producing oil and gas.

In terms of the impact of the proposed import standards (prescriptive standard and intensity standard) on gas trade, most stakeholders stated that the **import standard[19] should apply to ongoing contracts as well as contracts signed after the creation of the standard**. While not all stakeholders agreed on the impacts of the import standard on traded volumes of gas. At least one of the two following conclusions was supported by many of the stakeholders:

- The standard will add complexity to the LNG market because the trade routes will adapt to the new economic incentives. The pipeline gas market will be less impacted because the export routes are not flexible; and,
- The impact of the standard on the risk for energy security in the EU must be further assessed. The EU represents a significant share of the imported gas globally (about 25% of LNG imports between 2020 and 2022[20]) and has a high willingness to pay. Therefore, if the LNG market is not tight, the risk of additional constraints deterring exporters from the EU market is likely low. However, the import standard may impact gas price within the EU, due to the levied fees by the importers, that could get pushed to

[18] OGCI methane intensity includes total upstream methane emissions from all operated gas and oil assets. Emissions intensity is calculated as a share of marketed gas. OGCI website, accessed on March 2023: https://www.ogci.com/action-and-engagement/reducing-methane-emissions/

[19] Going forward, in this report, the "import standard" refers to both the prescriptive standard and the intensity standard.

[20] IEA, *Gas Market Report, Q4-2022 including Global Gas Security Review 2022*, 2022. Retrieved from: https://www.iea.org/reports/gas-market-report-q4-2022

the end consumers. The extent and magnitude of the impacts on prices, inside and outside the EU, have not been discussed in depth and are therefore left for further assessment.

A deeper cost-benefit evaluation associated with the import standard would allow the EU Commission to design its import standard in a way that maximizes both the economic benefits and the reduction of global methane emissions. Therefore, further analysis could be conducted on the economic efficiency of the import standards..

Furthermore, through dialogues with exporting countries, **the EU Commission can work on aligning regulations and verification practices**. This would make the standard more acceptable and would incentivize countries and companies to adopt the standard—or an equivalent—rather than redirecting their export to another region with less constraints.

By opening dialogues with other importing countries or regions, the EU Commission could discuss adopting similar import standards. If importing regions align their requirements for the gas they import, the risk for methane leakage decreases as it gets globally more challenging, or less profitable, to export gas that does not meet the standard. As a result, the EU import standard measure could become the backbone of a global standard.

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1. Introduction

To keep global temperature change to well below 2ºC, policymakers around the world are recognizing the need to drastically reduce methane emissions in parallel with carbon dioxide emissions.[21] According to the IEA, "tackling methane emissions from the energy sector represents one of the best near-term opportunities for limiting global warming because the pathways for reducing them are well known and often cost-effective".[22]

As one of the participants of the Global Methane Pledge in 2020, the EU has pledged to "lead the way globally to address methane emission reductions."[23] 90% of gas consumed in the EU is imported from outside of its borders,[24] which means that most of the associated methane emissions are also emitted outside of its borders. Establishing a methane import standard is crucial to assessing the methane intensity of imports and encouraging adoption of methane abatement best practices. This report examines a proposed roadmap to implementation of an EU methane import standard on gas to support methane emissions abatement from the gas sector, both within and outside of EU borders. Such an import standard would also bolster the EU's increased ambition on climate mitigation while ensuring compatibility with the fair market practices set out by the World Trade Organization (WTO).

This report is structured in three main sections, followed by appendices containing more detailed information on specific topics:

- Section 1: Introduction to the topic of methane emissions and methane related policy proposals.
- Section 2: Summary of the methodology and approach for developing the roadmap.
- Section 3: Roadmap for the development of an EU methane import standard.

1.1. Why is a methane import standard needed in the EU?

Disclaimer

This section explores a few reasons as to why a methane import standard is needed in the EU. The emission intensities presented in this section are from a study performed by Carbon Limits in 2022, using data from 2019. Not all countries exporting oil and gas to the EU were assessed as part of the 2022 study. They have been presented in this section to provide context to the topic of discussion.

Average emission intensities from exporting countries are much higher than best practice emissions: Though current estimates are highly uncertain, Carbon Limits used publicly available information (from sources including the UNFCCC, United States Environmental Protection Agency (EPA), academic papers, and other resources) to assess the methane emission factor (EF) of natural gas and liquified natural gas (LNG) entering the EU's borders[25]. **The net EF of pipeline natural gas and LNG entering the EU in 2019 is estimated to be 8.7 ktCH$_4$/bcm and 9.1 ktCH$_4$/bcm respectively.[26]** (**Error! Reference source not found.** summarizes the estimated methane EF (2019) for the countries assessed). In comparison, the EF of pipeline gas and LNG

[21] Global Methane Pledge, Retrieved from: https://www.globalmethanepledge.org/
[22] IEA (2022), *Global Methane Tracker 2022*, Retrieved from: https://www.iea.org/reports/global-methane-tracker-2022
[23] European Commission, *Communication from the commission to the European parliament, the council, the European economic and social committee and the committee of the regions on an EU strategy to reduce methane emissions*, 2020, Retrieved from: https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A52020DC0663
[24] European Commission, *Proposal for a Regulation of the European Parliament and of the Council on methane emissions reduction in the energy sector and amending Regulation (EU) 2019/942,* 2022.
[25] Carbon Limits analysis combining assessment done for the Hydrogen4EU study and data from bp Statistical Review of World Energy, 2020
[26] Carbon Limits analysis combining assessment done for the Hydrogen4EU study and data from bp Statistical Review of World Energy, 2020

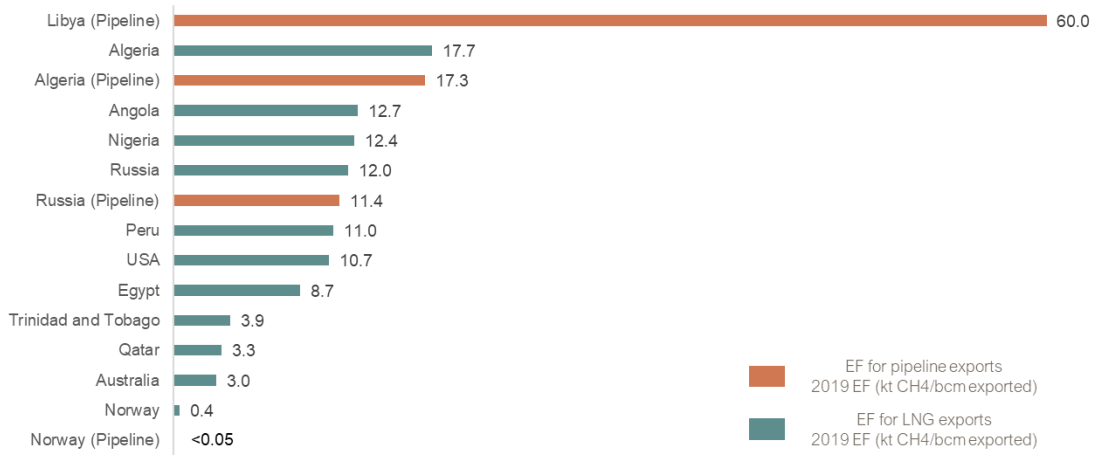
EF for Norway[27] is as low as 0.04 $ktCH_4$/bcm and 0.4 $ktCH_4$/bcm respectively. Norway is known to have adopted several Best Available Technology (BAT) and procedures to reduce methane emissions from oil and gas operations.[28] Meanwhile, the countries on which the EU is highly reliant for gas and LNG imports have a methane EF on average over 30 times higher than that of Norway. (More information on EF assessment can be found in Appendix A). Beyond technology, other drivers can explain these discrepancies between countries. For example, methane emissions regulation is not uniformly present or implemented throughout the countries exporting gas to the EU. In addition, not all countries are part of international methane-related pledges, which encourage countries and oil and gas producing companies to set targets for methane abatement and affect their incentive to reduce methane emissions. A summary of policies and international pledges associated with gas and LNG exporting countries can be found in Appendix B.

The methane abatement potential is significant and can be implemented at low costs with mature technologies: As per the IEA, if all available methane abatement technologies are implemented across the oil and gas value chain, around 75% of total oil and gas methane emissions could be avoided. Furthermore, since methane is a product that can be sold if captured, around 40% of total emissions could be avoided with measures that are expected to have no net cost (based on 2019 natural gas prices).[29]

A methane import standard could improve collaboration between the EU and other gas producing countries to ensure energy security in Europe while abating methane emissions: Challenges to methane abatement vary between the gas producing regions across the world. In Africa, countries such as Algeria are struggling to boost their natural gas production, while in the Middle East, certain oil wells produce significant volumes of natural gas but lack the infrastructure to process and market it. While the United States, on the other hand, is ramping up its natural gas production, reliable, transparent, independent, and scientifically robust approaches to carbon and methane accounting frameworks would need to be established and communicated. Considering the EU's plan to reduce its reliance on Russian gas, there is a significant opportunity for the EU to work collaboratively with different gas producing countries to ensure LNG supply with a low carbon footprint. This close collaboration could ensure EU meeting its energy demands while achieving its climate goals.[30]

[27] As of today, Norway is noted to have the lowest EFs associated with exported pipeline gas and LNG (to the EU), IEA, *Driving Down Methane Leaks from the Oil and Gas Industry: A Regulatory Roadmap and Toolkit*, 2021, Retrieved from: https://www.iea.org/reports/driving-down-methane-leaks-from-the-oil-and-gas-industry
[28] IEA, *Driving Down Methane Leaks from the Oil and Gas Industry: A Regulatory Roadmap and Toolkit*, 2021, Retrieved from: https://www.iea.org/reports/driving-down-methane-leaks-from-the-oil-and-gas-industry
[29] IEA, *Methane Abatement Options*, Retrieved from: https://www.iea.org/reports/methane-tracker-2020/methane-abatement-options
[30] Ravikumar et. al, *The US role in securing the European Union's near-term natural gas supply*, 2022, Retrieved from: https://www.nature.com/articles/s41560-022-01054-1

Figure 1: Methane EF of countries exporting natural gas and LNG to the EU (2019)[31]



Source: Carbon Limits analysis for Hydrogen4EU, 2022

With new supply agreements currently being discussed, the time could not be better to ensure that upcoming LNG contracts are in line with the international commitments of the EU: LNG demand in Europe increased by 60% in 2022 compared to the previous year and is only expected to grow in the years ahead to reach almost 40% of gas market share by 2024 (Figure 2).[32, 33, 34] Existing EU goals on supply diversification for security will likely affect the creation of new long- and short-term LNG contracts until low-carbon sources of energy are developed in the EU. Furthermore, expected decrease in gas demand as a result of implementation of REPower EU, the EU will have the ability to become more selective in its LNG contracts. Addressing the methane import standard in EU is therefore essential to ensuring that upcoming LNG contracts support countries and oil and gas operators with adequate methane monitoring, reporting, and verification processes.

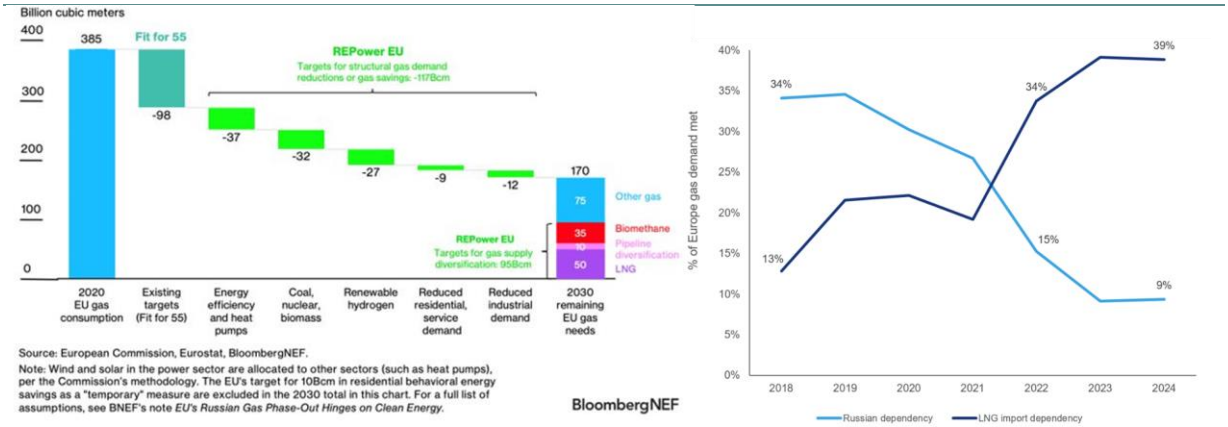
[31] The emission intensities presented in this figure are from a study done by Carbon Limits in 2022, using data from 2019. Not all countries exporting oil and gas to the EU were assessed as part of the 2022 study. This figure has been presented in this section to provide context to the topic of discussion.

[32] Wood Mackenzie, *Wood Mackenzie predicts European gas demand will continue to fall, helping gas storage outlook for this winter and the following*, 2022, Retrieved from: https://www.woodmac.com/press-releases/wood-mackenzie-predicts-european-gas-demand-will-continue-to-fall-helping-gas-storage-outlook-for-this-winter-and-the-following/

[33] Wood Mackenzie, How Europe's energy crisis changes the LNG market, 2022, Retrieved from: https://www.woodmac.com/news/the-edge/how-europes-energy-crisis-changes-the-lng-market/

[34] BBC, *EU reveals its plans to stop using Russian gas*, 2022, Retrieved from: https://www.bbc.com/news/science-environment-61497315

Figure 2: REPower EU plan for reducing reliance on Russian gas (left) and expected trajectory of LNG imports and reliance on Russian gas in 2025 (right)



Source: BloombergNEF[35] (left), Wood Mackenzie[36] (right), 2022

A methane import standard would also be in line with voter's perspectives, where there is a strong support for applying regulatory measures on EU oil and gas suppliers: Results from a representative survey conducted in August 2022 of 6,251 voting-age respondents from four countries central to the debate over methane regulations in the European Union (France, Italy, Germany, and Poland) and large importers of oil and gas, showed a support of 90% or more to the implementation of regulatory measures to EU suppliers. Furthermore, two-thirds of the sampled population support regulatory measures that include a pricing mechanism for oil and gas with high emissions intensities; and redistribution of this fee to low-income households increases support to 70%.[37]

1.2. Assessing the legal implications of proposed Methane Import Standard

As part of the development of the report, independent practitioners from Matrix Chambers were consulted to assess the legal implications of the import standard for methane proposed as part of this roadmap. As per their analysis, in general terms, there are no insuperable obstacles to strengthening the Proposed Regulation[38] in the ways envisaged in this roadmap. This is having regard to: precedent approaches set under other EU regimes which establish import standards, the rules of the WTO, and the international climate change regime under the UNFCCC/PA.[39,40]

As per the legal analysis, there is an increasing number of precedents for the imposition of EU import standards to achieve social or environmental outcomes. Such precedents include EU regulation relating to

[35] BloombergNEF, *The Future of European Energy Without Russian Gas in Five Charts*, 2022, Retrieved from: https://about.bnef.com/blog/race-to-net-zero-the-future-of-european-energy-without-russian-gas-in-five-charts/

[36] Wood Mackenzie, *Wood Mackenzie predicts European gas demand will continue to fall, helping gas storage outlook for this winter and the following*, 2022, Retrieved from: https://www.woodmac.com/press-releases/wood-mackenzie-predicts-european-gas-demand-will-continue-to-fall-helping-gas-storage-outlook-for-this-winter-and-the-following/

[37] Clean Air Task Force, *Public Opinion of EU Methane Regulation*, 2022, https://www.catf.us/2023/04/european-citizens-from-france-italy-germany-and-poland-strongly-support-tough-regulations-to-reduce-methane-emissions/

[38] The "Proposed Regulation" refers here to the *Proposal for a Regulation of the European Parliament and of the Council on methane emissions reduction in the energy sector and amending Regulation (EU) 2019/942,* 2021. At the time of the analysis, the EU is developing a framework for regulating methane emissions in the energy sector. Practitioners from Matrix Chambers carried an analysis of the roadmap recommendations in regards to the Commission's Proposal.

[39] Independent practitioners analysed the recommendations to the Proposed Regulation described in this document from a legal perspective and submitted a Joint Advice. *the practitioners summarized the* recommendations to the Proposed Regulation as*: (1) expand the requirements for MRV, LDAR, and venting and flaring to the full value chain, back to the point of production; (2) develop a robust and complete reporting and certification system for imports; (3) ensure that importers can use alternative measures, when comparable, and a system of regulatory equivalence; (4) by 2025 at the latest, propose a performance standard for imports.*

[40] Independent practitioners from Matrix Chambers, *Proposal for an EU Regulation on methane emissions reduction in the energy sector and Proposed import standard for methane emissions in respect oil and gas imported into the EU: Joint Advice*, 2023

deforestation, biofuels, corporate due diligence and illegal fishing. They provide a range of models for the adoption of stronger import requirements in the Proposed Regulation including in respect of due diligence, certification as to relevant standards, the adoption of a country benchmarking system, specific requirements for cooperation with third countries and requirements relating to monitoring and enforcement.[41]

As for the main question posed to the independent practitioners on the compatibility of the proposed standard with the rules of the WTO, the practitioners recommended that in order to be non-discriminatory, the methane import standard should impose a burden on those seeking to export to the EU that is equivalent to and no more onerous than that applied to EU-produced fossil fuels. However, even if the methane import standard is inconsistent with the non-discrimination principle, the practitioners consider that it could be justified under GATT Article XX(g): "conservation of exhaustible natural resources", GATT Article XX(b): "necessary to protect human … health", and/or Article 2.2 of the TBT Agreement: "protection of … the environment", because the proposed import standard[42]:

- relates to the conservation of the climate, and pursues sustainable trade in line with the EU's international climate obligations; and
- would not constitute a means of arbitrary or unjustifiable discrimination or a disguised or unnecessary restriction on trade because it does not involve any protectionist purposes or effects, and it is not the most restrictive available measure to achieve the objective sought.

Furthermore, the independent practitioners were consulted during the workshop on some aspects on the proposed import standards, details of which are provided in the following sections, where relevant.

1.3. Status of the EU methane regulation making process

As part of the European Green Deal, the European Commission published in 2020 an EU methane strategy which presents cross-sector and sector-specific actions to decrease methane emissions in the energy, agricultural, and waste (and wastewater) sectors.[43] In December 2021, the Commission published a ***Proposal for the "Regulation of the European Parliament and of the Council on methane emissions reduction in the energy sector and amending regulation (EU) 2019/942"*** (hereafter referred to as "the Legislative Proposal") which transposes into law the EU's commitment to decrease methane emissions from fossil energy produced or consumed in the EU.[44] In December 2022, the EU Council adopted its general approach on the methane emissions regulation[45] (hereafter referred to as "the Council's Approach"). At the time of the development of this roadmap[46], the EU Parliament has not yet adopted its position on the regulation. The Legislative Proposal and the Council's Approach set obligations regarding monitoring and reporting, practice and technology standards, and mitigation (articles 12 to 18). Neither the Legislative Proposal nor the Council's Approach contain an import standard on fossil energy: most of the measures described in those documents only apply to fossil energy produced and transported within the EU. Actions beyond the EU borders are limited to setting importer requirements, the creation of a methane transparency database, and the development of a methane emitters global monitoring tool.

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[41] Independent practitioners from Matrix Chambers, *Proposal for an EU Regulation on methane emissions reduction in the energy sector and Proposed import standard for methane emissions in respect oil and gas imported into the EU: Joint Advice*, 2023
[42] Independent practitioners from Matrix Chambers, *Proposal for an EU Regulation on methane emissions reduction in the energy sector and Proposed import standard for methane emissions in respect oil and gas imported into the EU: Joint Advice*, 2023
[43] European Commission, *Communication from the commission to the European parliament, the council, the European economic and social committee and the committee of the regions on an EU strategy to reduce methane emissions*, 2020, Retrieved from: https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A52020DC0663
[44] European Commission, *Proposal for a Regulation of the European Parliament and of the Council on methane emissions reduction in the energy sector and amending Regulation (EU) 2019/942,* 2021. Retrieved from: https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=COM%3A2021%3A805%3AFIN&qid=1639665806476
[45] European Council, *Proposal for a Regulation of the European Parliament and of the Council on methane emissions reduction in the energy sector and amending Regulation (EU) 2019/942 - General approach*, 2022. Retrieved from: https://www.consilium.europa.eu/en/press/press-releases/2022/12/19/member-states-agree-on-new-rules-to-slash-methane-emissions/
[46] April 2023

Table 1 summarizes the measures, contained in the Legislative Proposal, on which the roadmap builds. The table puts in parallel notable differences with the Council's Approach.

The development of an import standard is therefore a way to extend the ambition of the EU to reduce methane emissions occurring outside its border. The requirements set in the final version of the Regulation that will be adopted (hereafter referred to as "the Regulation") for fossil gas produced in the EU will ultimately impact the creation of an import standard. Indeed, as per WTO agreements, the EU cannot impose requirements stricter than the ones applying to local production on imported gas. Therefore, the measures proposed in the Legislative Proposal and the Council's Approach are a starting point for developing an import standard.

In addition, the extension of requirements to gas imported to the EU brings additional considerations on technical, economic, political, and juridical fronts. The multi-stakeholder workshop and interviews conducted as part of this project aimed at tackling the pillars required for the development of an EU methane import standard. The following section presents the methodology applied to develop a roadmap for a methane import standard.

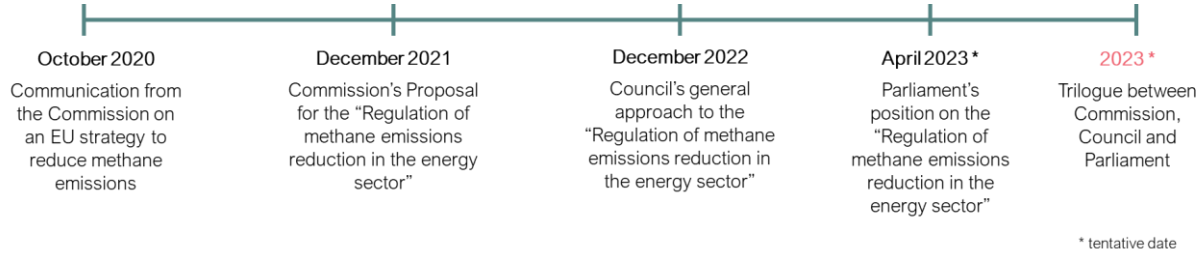


Table 1: Summary of measures, contained in the Legislative Proposal, addressed in the roadmap, and notable differences observed in the Council's Approach.

	Legislative Proposal [47]	Differences in the Council's Approach[48]
Competent authorities and independent verification		
Article 4: Competent authorities	Each Member State shall designate one or more competent authorities responsible for monitoring and enforcing the application of the Regulation.	No major difference with the Legislative Proposal.
Article 6: Inspections	The competent authorities shall carry out inspections, site checks or field audits examination of documentation to check the compliance of operators with the requirements set out in the Regulation. The period between two routine inspections shall not exceed two years.	The period between two routine inspections shall not exceed five years. Competent authorities may be supported by Union agencies or other suitable bodies.
Article 8: Verifiers	Verifiers shall assess the conformity of the reports submitted by the operators to the requirements set out in the Regulation. Check,	Verifiers shall use specifications established by delegated acts by the Commission. Until the specifications are set, the operators shall

[47] European Commission, *Proposal for a Regulation of the European Parliament and of the Council on methane emissions reduction in the energy sector and amending Regulation (EU) 2019/942,* 2021. Retrieved from: https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=COM%3A2021%3A805%3AFIN&qid=1639665806476

[48] European Council, *Proposal for a Regulation of the European Parliament and of the Council on methane emissions reduction in the energy sector and amending Regulation (EU) 2019/942 - General approach*, 2022. Retrieved from: https://www.consilium.europa.eu/en/press/press-releases/2022/12/19/member-states-agree-on-new-rules-to-slash-methane-emissions/

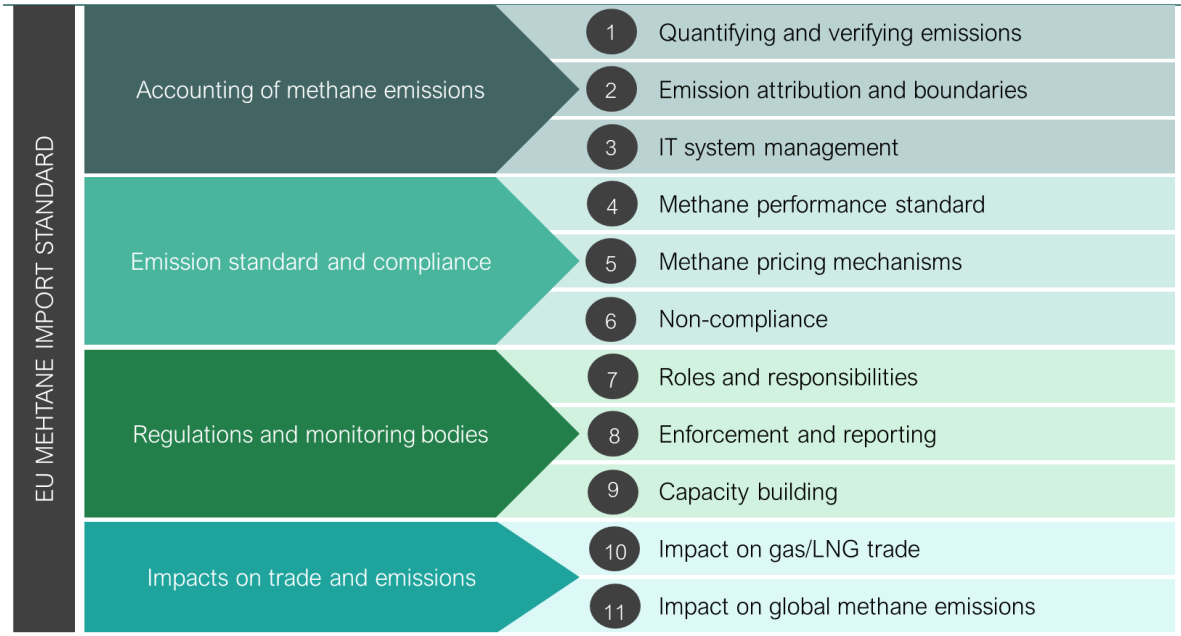
	e.g., the emission factors, the methodologies and the calculations used. Verifiers shall use free and publicly available European or international standards for methane emissions quantification.	provide information to the verifiers on the relevant standards or methodologies used by the operators.
Article 9: Independence and accreditation of verifiers	Verifiers shall be accredited by a national accreditation body pursuant to Regulation (EC) No 765/2008.	A national accreditation body accredits verifiers that are legal person. In addition, Member State may decide to authorise the accreditation of verifiers that are natural persons by a national authority other than the national accreditation body.
Article 10: International Methane Emissions Observatory (IMEO)	The IMEO shall be given a role of verification with regards to methane emissions data (including aggregation of data and verification of the methodologies used by companies to quantify emissions). The Commission shall submit methane emissions data to the IMEO. In turn, the information produced by the IMEO shall be made publicly available.	No verification role attributed to the IMEO. The Commission shall submit to the IMEO publicly available methane emissions data.
Methane emissions in the oil and gas sectors		
Article 12: Monitoring and reporting requirements	Requirements for operators: yearly reporting of emissions with quantification at source-level. First, based on generic emission factors, then using source-level direct measurements and, finally, complemented by direct measurements of site-level emissions.	Reporting of emissions based on quantification of source-level methane emissions (instead of direct measurements). Specifications for the measurements and quantification will be established by the Commission through delegated acts. The choice of appropriate quantification technologies for site-level quantification takes into account net economic and environmental benefits.
Article 14: Leak detection and repair (LDAR).	Requirements for operators: LDAR surveys of all relevant components, repeated every three months. Minimum detection limit of the devices used set to 500 parts per million (ppm). All components found to be emitting more than 500 ppm must be repaired or replaced.	Differentiated LDAR surveys depending on the type of components and the history of detection. Specifications are set for different situations on the type of program, the frequency of survey, the share of components to screen, the detection threshold, the timeline for repair.
Article 15: Routine venting and flaring.	Prohibition of venting and routine flaring except in case of emergency or malfunction or unavoidable and strictly necessary situations.	Some amendments to the situations in which venting and/or flaring is allowed. Only zero-emitting controllers and pumps can be used when a site is built, replaced or refurbished.

Article 17: Flaring efficiency.	Requirements for all new or refurbished flare stacks or other combustion device to have auto-igniters or continuous pilot and a complete destruction removal efficiency for hydrocarbons. Requirements for the operators to carry out weekly inspections of the flare stacks.	Requirements for all new or refurbished flares to have a minimum 98% destruction efficiency. Monthly inspections of the flare stacks.
Article 18: Inactive wells.	Requirements for the Member States to record and to equip with measurement device all inactive wells. Yearly reporting of the measurements. Requirements for Member States to implement mitigation plans to remediate, reclaim and permanently plug inactive wells located in their territory.	Requirements target temporarily plugged wells and permanently plugged and abandoned wells along with inactive wells. Extended timeline to record the wells for Member States with 40000 or more inactive, temporarily plugged and permanently plugged and abandoned wells. Provisions for when the monitoring obligations cease to apply to a well. Monitoring obligations are put on the operators instead of the Member States. Exceptions for offshore wells located at a depth greater than 700 meters.
Methane emissions occurring outside the Union		
Article 27 (+Annex VIII): Importer requirements	Requirements for the importer to submit information about the identification of the exporter and producer, the country and region of origin of the imported good, methane emissions reported by the exporter/producer, if any, identification of the verifier of emission reporting, if any.	Name and address of the exporter and producer required "where exporters or producers can be identified". Information "where relevant" on the producer and not only on the exporter.
Article 28: Methane transparency database	Establishment by the Commission of a methane transparency database containing the information reported by operators and Member States as well as importers. The database shall be made publicly available and free of charge.	No major difference with the Legislative Proposal.
Article 29: Methane emitters global monitoring tool	Establishment of a global methane monitoring tool to identify and make publicly available data on high-emitting sources of energy. The tool shall be based on satellite data and input from several certified data providers and services, including the Copernicus component of the EU Space Programme.	No major difference with the Legislative Proposal.

2. Methodology for Co-creating a Roadmap

Several intertwining cross-sectoral efforts need to be considered in developing a methane import standard, including legal and regulatory processes, economics and trade, emissions quantification, and reporting, among others. To address the main underlying aspects of elaborating an import standard, Carbon Limits thematically broke down the challenge into 11 sub-topics, called "building blocks," grouped into four axes, as depicted in Figure 3.

Figure 3: Overview of the four axes and the 11 building blocks – For more information see Appendix C



Source: Carbon Limits, 2023

To collect expert viewpoints on the different aspects of the methane import standard, CATF organized a workshop in Madrid, Spain, on February 14, 2023. Over 25 stakeholders participated in the workshop. The stakeholders were affiliated with more than 15 organizations including, but not limited to, non-governmental organizations (NGOs), academia, data companies, and law firms (see Appendix D). Independent practitioners from Matrix Chambers, contracted by CATF, provided guidance on legal aspects during the workshop and produced a Joint Advice for the attention of CATF[49]. The expertise of the stakeholders who participated in the workshop included methane emissions quantification and attribution, oil and gas trade and economics, EU policy, energy policy, and trade and environmental law. The workshop was structured around the building blocks presented above.[50] Five moderators from CATF and Carbon Limits were responsible for organizing and summarizing the discussions. The findings from the discussions were used to develop an overarching roadmap framework, which was discussed further in small-group video-conference interviews with the stakeholders.[51] During these one-hour meetings, Carbon Limits presented the outcomes of the workshop to the stakeholders, focusing on the most relevant aspects linked to their area of expertise. The stakeholders brought clarifications and corrections to the findings, proposed solutions to the challenges identified during the workshop, and raised new potential challenges or risks, leading to an overall refinement of the results. The outcomes of the workshop and the interviews were summarized in a roadmap, as presented in the next section.

[49] Independent practitioners from Matrix Chambers, *Proposal for an EU Regulation on methane emissions reduction in the energy sector and Proposed import standard for methane emissions in respect oil and gas imported into the EU: Joint Advice*, 2023
[50] More information on the building blocks can be found in Appendix C.
[51] Note that not all participants to the workshop could join a small-group interview within the time constraints. In parallel, some stakeholders that could not join the workshop participated to the interviews.

3. Roadmap for the Development of an EU Methane Import Standard

Disclaimer

The observations presented in this roadmap are a synthesis of discussions from the workshop and one-on-one interviews performed with the stakeholders. Stakeholders were divided into groups to discuss different topics, hence not all stakeholders participated in every discussion. Any reference to stakeholder agreement and consensus refers to the conclusions that had the most weight and does not necessarily reflect the individual viewpoints of the stakeholders. Any conclusion statement and recommendation presented is also a synthesis of the findings and does not represent Carbon Limits' own views.

As a follow up to the ***Proposal for a Regulation of the European Parliament and of the Council on methane emissions reduction in the energy sector and amending Regulation (EU) 2019/942,*** (henceforth referred to as the "Legislative Proposal")[52], trilogues between the Council, the Parliament and the Commission will occur in 2023. The aim of the trilogues is to negotiate and find a compromise on the methane regulation proposal, with each party starting from their respective positions.

The roadmap presented here was developed to support the discussions during the trilogues. The main outcomes from the discussions with the expert group of stakeholders during the workshop and post-workshop interviews have been summarized in the following sections.

3.1. Initial Recommendations for the EU Methane Import Standard

The stakeholder discussions began with an effort to better understand the plans presented in the Legislative Proposal and how the stakeholders can work to build on those plans. Considering that the Legislative Proposal contains prescriptive actions for European gas producers to reduce methane emissions the stakeholders agreed that the *EU should initiate an EU methane import standard with a* ***"prescriptive standard."*** In this case, a prescriptive standard dictates a set of practices and technologies that must or must not be implemented. The standard can be implemented using policies associated with methane abatement established at country, region, or company level. The standard should firstly be applied at the EU level, followed by implementing it for methane imports flowing into the EU. This is done to ensure compliance with WTO agreements, where the EU cannot impose requirements stricter than the ones applying to local production on imported gas. As stated in Section 1.2 proposals for such standards exist, with further discussions planned during the trilogues in 2023. The stakeholders were in favor of a three-year timeline (implementation in 2026) for the implementation of the prescriptive standard. This timeline could help establish Monitoring Reporting and Verification (MRV) systems in countries that could help to support the evolution of the regulatory standard over the years.

As the prescriptive standard is established, stakeholders recommended that the standard should eventually include a methane ***"intensity standard"*** (emissions per amount of gas imported). In this roadmap, an intensity standard is defined as a maximum allowable methane intensity for the gas imported into the EU's borders. Economic provisions, such as applying financial penalties or incentives, can be associated with the methane intensity standard. In this context, regulations would provide the industry with a choice between reducing emissions or paying for the methane released.[53] Following WTO rules, imposing a methane intensity

[52] European Commission, *Proposal for a Regulation of the European Parliament and of the Council on methane emissions reduction in the energy sector and amending Regulation (EU) 2019/942,* 2021. Retrieved from: https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=COM%3A2021%3A805%3AFIN&qid=1639665806476

[53] Definition adapted from IEA's *Regulatory Toolkit for driving down methane emissions from the Oil and Gas sector*. Retrieved from: https://www.iea.org/reports/driving-down-methane-leaks-from-the-oil-and-gas-industry/regulatory-toolkit

standard on imported gas requires that a similar intensity standard exists for production within the EU (or to be able to demonstrate that the measures in place in the EU lead to the same outcome), which is not the case as per the last version of the Legislative Proposal. There was no consensus on the timeline for implementing the methane intensity standard. General feedback was to assess the reactions to the prescriptive standard and follow methane pricing systems that are being developed in other countries to finalize the timeline of implementation.

The next sections describe in detail the prescriptive standard and intensity standard, highlighting the steps required for their respective implementation. In the scope of work for this project, the workshop was aimed at discussing the import standards for gas imports, however, on post-workshop analysis, the prescriptive standard has been recommended for both oil and gas imports.[54] The focus on gas for the intensity standard presented here is because discussions for the intensity standard during the stakeholder workshop were limited solely to this sector. Due to the significant impact of methane emissions caused by oil, we acknowledge that oil must be included in the development of a comprehensive intensity standard that can be used across the oil and gas sector, however due to the additional calculations required, these considerations were not able to be fully addressed by the stakeholders.

Box 1: Import standard on oil

The intensity standard presented in this document does not include the design of a methane import standard for oil. Global methane emissions associated with oil production are as large as the ones associated with gas production.[55] Though a large share of the findings could be reused, the development of an import standard for oil would need to consider several additional issues that were not covered—and not necessarily identified—during the discussions.

As a starting point, some considerations were touched upon by stakeholders:

- Including oil in the import standard would multiply the number of producing countries with which the EU should open discussions.
- Creating an import standard on oil requires additional methodology development (*e.g.* regarding emissions allocation).
- Creating an import standard on oil might incentivize producers to capture the associated gas that is currently vented or flared.

Incorporating emissions associated with oil would need to be developed as part of future work.

3.2. Prescriptive Standard

The IEA defines a prescriptive regulation as one that "directs regulated entities to undertake or not to undertake specific actions or procedures."[56] In this roadmap, a prescriptive standard is defined as one that dictates a set of practices and technologies that must or must not be implemented. The standard can be implemented using policies associated with methane abatement established at the country or regional level, or using practices and technologies deployed at company level. This section presents the results of the discussions between stakeholders regarding the design and the implementation of a prescriptive standard.

[54] Internal analysis by CATF.
[55] IEA, *Global Methane Tracker 2023*, 2023. Retrieved from: https://www.iea.org/reports/global-methane-tracker-2023
[56] IEA, Driving Down Methane Leaks from the Oil and Gas Industry A regulatory roadmap and toolkit, 2021. Retrieved from: Driving Down Methane Leaks from the Oil and Gas Industry – Analysis - IEA

What could the prescriptive standard look like?

According to the stakeholders consulted and in line with the Legislative Proposal, the standard should at least set requirements on MRV, Leak Detection and Repair (LDAR), and limitations on venting and flaring.

Requirements for gas produced in the EU are already included in Chapters 2 and 3 of the Legislative Proposal[57]. *The prescriptive standard should extend all the measures presented in Chapter 3 of the Legislative Proposal to gas imported into the EU*, including:

- Monitoring and reporting of methane emissions based on source-level quantification, first based on generic emission factors, and then based on source-level measurements, then completed by site-level measurements (article 12);
- LDAR with specified frequency and minimum detection limit (MDL) (article 14); and,
- Prohibition of routine venting and flaring and reporting of venting and flaring events when they occur (articles 15 and 16).
- Technology requirements for flaring efficiency for all new or refurbished flares (article 17); and,
- Reporting, quantification, and mitigation of emissions on inactive wells (article 18).

To be compatible with WTO agreements, the requirements on the prescriptive standard applied on imports cannot be stricter than what is set within the EU. This means, for example, that operators outside the EU should have at least the same flexibility to use generic emission factors for quantification as the operators in the EU, that the LDAR constraints regarding MDL and frequency cannot be stricter than what is imposed in the EU, and that the exceptions to venting and flaring prohibition granted in the EU must also apply outside the EU. Consequently, some stakeholders expressed concern that if the final version of Regulation does not put enough constraint on fossil energy produced in the EU, it will limit the benefits in terms of methane mitigation in and outside the EU.

The obligations of reporting the location of fossil gas production and transport can be attached to the importer of gas, over which the EU has jurisdiction. Article 2 of the Legislative Proposal defines an importer as "a natural or legal person who, in the course of a commercial activity, places gas, oil or coal from a third country on the Union market."[58]

The minimum data to be submitted by the importer could include: 1) production location of the energy; and, 2) countries and regions through which the energy was transported. The requirements may differ in the case of company equivalence (see below), where the name and address of the exporters and, if different, the name and address of the producer must be presented. These obligations fall on the importer. As stated in article 30 of the Legislative Proposal, failure to submit the required information should be subject to penalties. Depending on the type of incentive mechanism selected, additional penalties for importing gas that does not meet the prescriptive standard, may be imposed on the importer.

Enforce the prescriptive standard by using an equivalence principle.

Stakeholders highlighted the need to *allow a* ***principle of equivalence*** *in the application of the prescriptive standard*. Exporting countries[59] can have the ability to demonstrate that they have prescriptive requirements in place that lead to similar methane emissions intensity as the requirements set by the EU. While the

[57] European Commission, *Proposal for a Regulation of the European Parliament and of the Council on methane emissions reduction in the energy sector and amending Regulation (EU) 2019/942,* 2021. Retrieved from: https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=COM%3A2021%3A805%3AFIN&qid=1639665806476

[58] European Commission, *Proposal for a Regulation of the European Parliament and of the Council on methane emissions reduction in the energy sector and amending Regulation (EU) 2019/942,* 2021. Retrieved from: https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=COM%3A2021%3A805%3AFIN&qid=1639665806476

[59] In this report, exporting countries could be a country or states whom the EU methane import standard applies to. For simplicity, the phrase "exporting country" encompasses both the producing country/state and the final exporting country/state (transit) when they are different.

importer bears the responsibility of submitting the required information on energy imports, the exporting countries can coordinate with the EU Commission for establishing equivalence.

To determine equivalence, the stakeholders recommended that the *EU develop a procedure to handle applications from exporting countries and have a set of predefined criteria to assess if the practices in place in the country can be granted equivalence*. For example, equivalence can be granted upon demonstration, based on scientific data and modelling, that the practices result in similar emission intensity. The EU will have to determine which methodologies are suitable to demonstrate that equivalence. This assessment could be performed in collaboration with third-party verifiers.

One of the identified core difficulties of the prescriptive standard identified by the stakeholders is defining the stringency of the criteria for obtaining equivalence. Ideally, equivalence should only be given when the practices resulting from an "equivalent" regulation leads to an emission intensity similar or lower to what would be observed with the EU standard. However, this might not be immediately achievable by countries with no MRV programs and no or limited methane management policies already in place. *Therefore, some stakeholders recommended that the equivalence criteria be built iteratively: a certain level of alignment would be sufficient to be granted equivalence at first, and the required level of alignment could increase year after year to maintain equivalence*.

Another risk identified by stakeholders is that the standard could be too restrictive to be applicable (*e.g.* specific frequency of the LDAR campaigns). If very rigid, the standard might not be realistic to apply in the region of production, either from a regulatory or technical standpoint. From a regulatory standpoint, requirements set by the EU could compete with local regulations in the exporting entity (*e.g.* different methods/technologies accepted for quantifications). From a technical standpoint, it could be argued that emission profiles in some producing regions are significantly different from the emission profile in the EU due to external factors (*e.g.* leaner gas), which can make the requirements more difficult to attain.

Extend the equivalence principle to exporting companies.

In addition, stakeholders recommended that *companies that have methane management practices in line with the prescriptive standard could apply for a company-level equivalence,* even if the countries they operate in do not have equivalence. Thus, the EU would also need to develop a procedure for handling applications and determining equivalence at the company level. Additionally, *the EU should have procedures in place to verify the information regarding practices reported by companies.* This could include procedures for on-site verifications. On-site verifications by third-party verifiers accredited by EU entities would however require consent of the countries in which the operations take place. This could be agreed as part of trade agreements between the EU and exporting countries. Alternatively, the responsibility to monitor and verify the companies' practices could be passed on to the exporting country as part of voluntary partnership agreements[60].

Since one company's practices may differ significantly from one region to another, the EU will have to determine in its procedures the most relevant scale for reporting, verification and equivalence assessment to ensure the companies have incentive to improve their practices across all sites. One pitfall of the global company scale is that companies that have good-enough global average practices would not be incentivized to improve their practices in the worst performing regions or facilities. On the other hand, one pitfall of the facility scale is that it may allow the companies to select only the facilities with the best practices for the export to the EU and dedicate their other assets to other markets (see "methane leakage" in Section 3.4). Intermediate solutions (*e.g.* company scale with one region) can be designed and analyzed. Even though the stakeholders did not bring out a unique recommendation, several highlighted that facility scale presents high risks of methane leakage and would therefore be detrimental.

[60] CAN Europe, *Report on extension of provisions under the regulation on methane emissions in the energy sector outside EU borders*, 2022. Retrieved from: https://caneurope.org/content/uploads/2022/10/Methane-Legal-Study-Report-1.pdf

When assessing the equivalence at the company level, some stakeholders highlighted that voluntary participation in international initiatives such as Oil and Gas Methane Partnership[61] (OGMP) and GTI Energy's Methane Emissions Measurement and Verification Initiative (Veritas protocols), or voluntary MiQ certification, could be accounted for in the criteria. However, the OGMP 2.0 framework only targets reporting aspects and methane intensity targets and is not prescriptive regarding LDAR or routine flaring prohibition. The framework currently does not give precise indications on elements such as the frequency of measurements, the representation of the measured sample, and how to extrapolate *ad hoc* measurements to yearly quantification. Therefore, participation in OGMP 2.0 will likely be insufficient in providing equivalence to the prescriptive standard. Besides, participation in Veritas protocols only has implications about the quality of the measurements and therefore only informs on the monitoring practices of the company. On the other hand, MiQ certification is only done at facility-level, meaning that several certifications would be necessary if reporting at the scale of the company is required. The role voluntary frameworks can play in the equivalence is thus left to further discussion.

Both the country level and the company level *equivalence can be reassessed regularly* so that countries/regions and companies can win or lose their equivalence depending on the latest information provided to the EU. The period of validity of the equivalence is to be determined. The reassessment of equivalence could take into consideration the fact that requirements for obtaining the equivalence might be ratcheted up gradually to progressively reduce the highest-emitting practices.

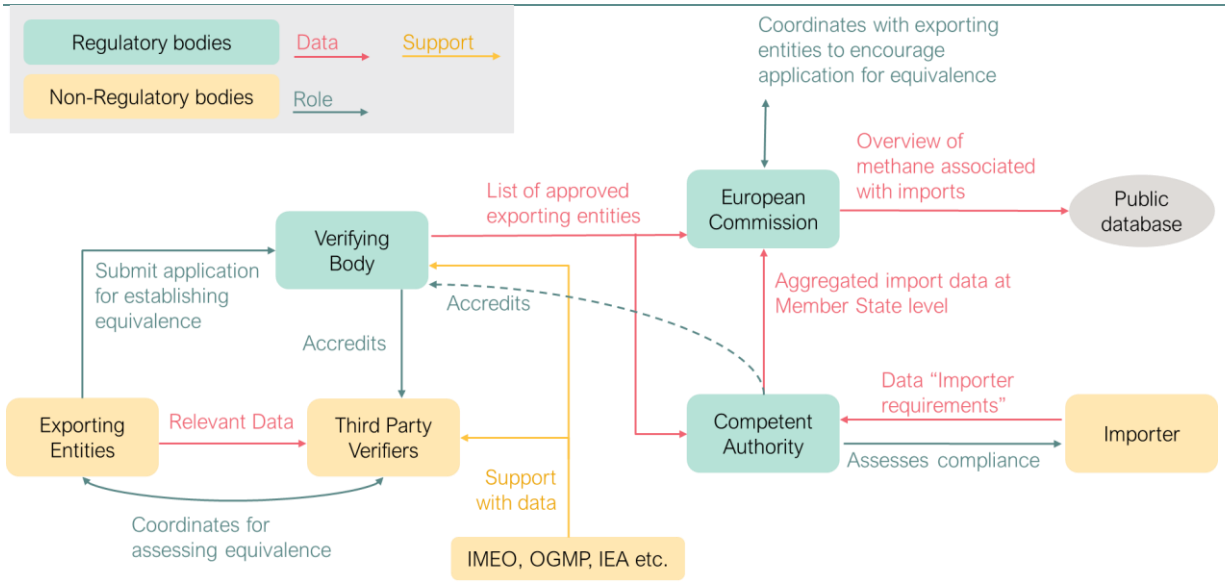
Encourage compliance through incentive mechanisms associated with the prescriptive standard.

To be effective, the prescriptive standard should be associated with an incentive mechanism, *i.e.* a mechanism to encourage market actors to comply with the standard. The main solution supported by the stakeholders was *to incentivize priority market access using a penalty system. When importers import fossil gas from countries or companies that do not meet the standard, they would need to pay a fee or a penalty.* The importers will thus have an incentive to opt for exporting entities that have proved equivalence. However, if too many exporting entities do not comply with the standard, the importers might have no other option than to pay a penalty. Another option discussed by the stakeholders was the application of a *price premium. In this case, the natural gas purchaser pays a premium on the price of the imported gas if it is produced by an entity that has proved equivalence.* Some stakeholders however pointed out that this approach would not incentivize producers to further improve their practices when they already meet the standard, therefore limiting the potential for methane emissions mitigation. In addition, the price premium might not be compatible with existing contracts as it would require the importers to pay more.

Application for equivalence would be in the hands of exporting entities (countries, states, and companies) while obligations on penalty would be placed on importers in the EU. This challenge was identified by stakeholders on the implementation of the market priority access mechanism. The prescriptive standard should be designed to incentivize exporting entities to apply for equivalence. The EU could facilitate this process by opening dialogues with exporting entities to align practices and encourage them to apply for equivalence.

[61] Stakeholders discussed OGMP much more than other frameworks and initiatives. One reason for that is that the EU Commission is involved as a non-company member in OGMP. Even though this report only mentions OGMP henceforward, it acknowledges other frameworks exist and might be relevant to the process.

Figure 4: Data flow and responsibilities of different bodies in the prescriptive standard



Source: Carbon Limits summary from stakeholder consultation, 2023

A three-year horizon would be reasonable for the implementation of the prescriptive standard.

General feedback from stakeholders places a three-year horizon as a reasonable timeline for the implementation of the regulatory standard (with implementation in 2026 if the regulation is passed in 2023). Assuming it applies, Article 2.1 of the Technical Barrier to Trade (TBT) Agreement "requires that technical regulations, standards and conformity assessment procedures are to be applied to products imported in a manner no less favourable than it treats 'like' products in the domestic market."[62] This principle may affect the timeline for effective implementation of the standard. For instance, exporting entities should be given at least as much time as producers in the EU to achieve reporting with source-level measurements (24 months from the date of the Regulation's entry into force, as per the Legislative Proposal).

3.3. Emission Intensity Standard

An emission intensity is defined as the quantity of emissions per quantity of product used. In this case, it would be the total methane emissions from different segments associated with natural gas production (including associated gas production)[63] divided by methane content of the natural gas throughput (including associated gas production).[64] *The emission intensity target represents the maximum level of acceptable emissions*, meaning that gas having a higher emission intensity would not meet the standard. The intensity target can be differentiated by segment (upstream, midstream, and downstream activities) or applicable to a full value chain.

To be in line with the TBT Agreement of the WTO, stakeholders agreed that the EU would first need to set an intensity standard for gas produced in the EU before implementation of an emission intensity target standard for imported gas. The EU could, for example, use the industry's best practice targets as a starting point to develop its own targets. For instance, the Oil and Gas Climate Initiative (OGCI) 2025 target for

[62] Independent practitioners from Matrix Chambers, *Proposal for an EU Regulation on methane emissions reduction in the energy sector and Proposed import standard for methane emissions in respect oil and gas imported into the EU: Joint Advice*, 2023. Document by Matrix Chamber, for CATF, in association with the project on developing EU methane import standard.
[63] In case of associated gas production, the volume of marketable gas should be taken into consideration. Associated natural gas, is natural gas produced by oil wells. By contrast, non-associated gas is natural gas produced by natural gas wells.
[64] M.J. Bradley & Associates, NGSI Methane Emissions Intensity Protocol, Version 1.0, 2021. Retrieved from: NGSI_MethaneIntensityProtocol.pdf (eei.org). To be noted that

upstream gas production is "well below 0.2%."[65] Benchmarking emission estimates for production within the EU could provide a better indication on the targets to be set. If the maximum allowable standard set within the EU is higher than the one recommended by the OGCI, a plan for updating the intensity should be put in place to incrementally reduce emissions. This section only addresses the establishment of an intensity standard for gas imports, assuming a similar standard is in place or being implemented for natural gas produced in the EU. The cost, impact and relevance of an emission intensity standard within the EU has not been evaluated as part of this project.

When developing an emission intensity standard for imported gas, stakeholders recommended that *methane emissions occurring along the whole value chain until the gas reaches the EU border be considered*. The intensity target for imported gas should be set at a level that reflects—without being stricter than—what would be applied to domestic production. Aligning the intensity target on internationally recognized standards may decrease the risk of the import standard being considered as an unnecessary restriction to trade.

As specified in the prescriptive standard, stakeholders agreed that *the obligations of reporting emissions of imported gas and LNG should be the responsibility of the importer, over which the EU has jurisdiction*. The importers would be required to provide evidence that the methane intensity for the imported oil or gas is not above the intensity target. The importer may or may not receive data on methane emissions from the exporting entities. Different strategies could be pursued in both cases, as detailed in the subsequent sections.

The EU Commission needs to develop methodology/guidance for methane emissions quantification and reporting.

To determine the emission intensity associated with gas in a standardized way, the stakeholders agreed that *the EU Commission will need to develop methodologies (or evaluate existing methodologies[66] and adapt them to the requirements of the standard) for accounting methane emissions*. This methodology should preferably be developed in collaboration with exporting and importing countries, to get a large approbation. The methodologies could cover, at a minimum, the following aspects:

- The scope and boundaries of the gas value chain considered, including a list of the emission sources that would need to be quantified (including if and how to include emissions before or after production has started);
- The accepted methods for quantification and the monitoring requirements that companies must meet, which could build on the monitoring and reporting requirements of the prescriptive standard (*e.g.* requirements of measurement-based quantification at source-level);
- How to account for emissions along the whole gas value chain, including transmission pipelines, LNG cargo, and liquefaction and regasification plants;
- How to account for and allocate methane emissions to gas in the case of associated gas production; and,
- The way the intensity should be calculated and reported for gas. The reported numbers for the intensity and the other mandatory information to be reported (typically the imported volumes) should allow for back-calculating of absolute methane emissions (*e.g.* in tons of methane),
- Guidance on reporting uncertainties and setting a maximum level of uncertainty for the quantified methane emissions;
- Guidance for third-party verifiers for assessing and confirming the emissions reported by importers recognizing the specific challenges associated with methane verification.

[65] OGCI methane intensity includes total upstream methane emissions from all operated gas and oil assets. Emissions intensity is calculated as a share of marketed gas. OGCI website, accessed on March 2023: https://www.ogci.com/action-and-engagement/reducing-methane-emissions/

[66] Such as and GTI Energy's Methane Emissions Measurement and Verification Initiative (Veritas), or voluntary MiQ certification

Overall, the stakeholders' recommendation is for the EU to take inspiration from the industry's best practices—the OGMP 2.0 framework, for example—to build its own emissions quantification methodology.

According to the independent practitioners from Matrix Chambers[67], "To reduce the 'trade-restrictive effect' of regulations and methane standards on imported gas and minimise the risk of WTO-inconsistency *the EU should be encouraged to recommend to other WTO Members who signed the [Global Methane] Pledge to attempt to harmonise regulations, emissions standards, methodologies for calculating emissions, etc*. Also, the more a methane emission standard or methodology used to calculate methane intensity is based on international standards the more likely it will not be considered an unnecessary restriction to trade. Another possibility is to consider accepting equivalent standards or regulations from other countries."[68]

Box 2: Super-emitters

One challenge identified with quantification of emissions at the company level is accounting for super-emitters. Super-emitters are large emissions events that disproportionately contribute to the overall emissions. Because they can be time-limited and are typically not part of regular operating conditions, they are not easily detected and quantified. Past work has demonstrated that they are not always accounted for or reported in the companies' inventories.[69] Depending on the scale of reporting, the question of attribution of these super-emitters to gas being exported to the EU could also be raised.

Therefore, quantification methodologies should include a detailed approach to identify, quantify, and attribute these events. The methodologies could rely on reconciliation models that account for the types of measurement technologies used, the frequency of deployment, the share of assets and sources covered by measurement technology deployments, and the types of activities and components at a facility to produce comparable emission data.

Box 3: Challenges with value-chain tracking

Quantification of value chain emissions involves tracking gas and its associated emissions from extraction, processing, and transmission until it reaches the EU's borders. This can be challenging since the gas from several fields, with potentially different emissions profiles, sometimes flows to a same liquefaction plant (for LNG) or through the same pipeline. Similarly, an LNG cargo may contain gas from different facilities. In addition, LNG cargo itineraries may fluctuate and include idle time, which makes the quantification of emissions associated with transport more challenging.

However, accounting methodologies have been developed previously (*e.g.* MiQ) and could be used to develop the EU methodology. Whenever possible, stakeholders recommended to keep methodologies as simple as possible to improve their applicability. In addition, issues tied to aggregation of gas from several fields to a single liquefaction plant may only concern a limited number of countries (*e.g.* US, Algeria). In other countries, the situation may be simpler with LNG plants directly connected to a single production field.

Establish a transparent verification process to assess and certify reported emissions.

To help ensure that reported emission data are consistently determined with the quantification methodologies set up by the EU, stakeholders recommend that detailed and transparent verification procedures be established. *The verification process could typically rely on third-party verifiers accredited by*

[67] Matrix is a barristers' chambers located in London, Geneva and Brussels. They were contracted by CATF to participate in the workshop discussions to provide legal advice on the recommendations presented by the participants.
[68] Extract from Matrix Chambers, *Proposal for an EU Regulation on methane emissions reduction in the energy sector and Proposed import standard for methane emissions in respect oil and gas imported into the EU: Joint Advice*, 2023
[69] Alvarez et. Al, *Assessment of methane emissions from the U.S. oil and gas supply chain*, 2018, Retrieved from: Assessment of methane emissions from the U.S. oil and gas supply chain | Science

the EU and/or the competent authorities of the Member States. The EU could set up a list of requirements that independent parties must meet to qualify as verifiers. Consequently, competent authorities of the Member States could publish a list of accredited verifiers. *The EU could develop verification methodologies detailing the conditions of certification of the emission data.* To do so, the extensive experience from existing verification processes in the EU can be leveraged, though some specific challenges associated with methane emissions exist (see Box 4). *To mitigate the risk of "trade-restrictive effect," the certification process should allow some flexibility in accepting methodologies used to calculate methane intensity that are based on international standards*. Emission data that have been certified by international frameworks and/or data reported by companies that have been granted equivalence on the regulatory standard (MRV requirements) could be considered as validated.

The development of verification methodologies would be a cornerstone of the standard and the verification in itself would likely be resource intensive. Methane emissions are more challenging to quantify than other GHGs such as CO_2. Methane emissions can vary significantly over time and there are no typical direct correlations between an operational parameter and site- or even source-level emissions (e.g. fuel consumption for CO_2 emissions). Therefore, verification would likely imply a thorough review of a number of parameters, data points, processes and calculations, as well as a certain level of understanding of methane emissions in the oil and gas sector based on site- and source- level measurements, in order to provide an assessment that goes beyond an assessment of the reported values for methane emissions. Currently, there is very limited experience worldwide with verification of reported methane emissions to this extent.

To help the verification and certification process, third-party verifiers could be supported by data on emissions, practices, and observed events provided by the International Methane Emissions Observatory (IMEO), notably the Methane Alert and Response System (MARS), OGMP or NGOs.

Box 4: Challenges with emission data verification

Stakeholders highlighted that verification (at site level by third party verifiers) of emission data reported by the importer may pose several challenges:

- There is a concern that exclusively desk-based verification of emission data against average numbers could lead to validation of inaccurate data.
- There is a concern that on-site visits might be inefficient due to variability in operating conditions. A one-time check might therefore not be representative of yearly emissions or practices.
- The use of satellite data for verification has some important limitations, especially concerning the detection threshold of satellite methane quantification technologies. For example, small emission sources and sources in certain areas (under thick cloud cover *etc*.) cannot be detected. Even for the detection of super-emitters, current detection thresholds only allow for the detection of the largest events.

Considering these challenges, it is important that third-party verifiers have the right expertise to interpret the data submitted by exporting entities, and are capable of complimenting their research with the data provided by organizations such as IMEO, OGMP, MiQ, etc.

Apply default EFs if the importer does not receive emission data from exporting entities.

As per the stakeholders, to do so, *the EU would need to carry out a benchmarking exercise to assign default EFs at country and/or regional levels for different segments and activities*. To determine the default EFs, by country or regions, the EU could base the benchmarking on scientific and internationally recognized data including scientific papers, satellite data, defaults from the IPCC, IEA data *etc.*

To avoid high-emitting companies benefiting from the default system, the approach would need to be conservative (*i.e.* opting for high estimates) to account for the worst performing sites in each country or regions, and it would need to incorporate super-emitters. Adopting conservative estimates, such as setting the default EF at the 90th or 95th percentile, instead of the average, could incentivize companies to improve

their monitoring and reporting. A consultation with independent practitioners from Matrix Chambers stated that opting for a conservative estimate when the exporter does not provide sufficient emissions data could be considered a valid approach under the WTO exception clause, however a detailed assessment of this risk in the context of climate change mitigation would need to be performed.

To further incentivize exporting companies to provide emissions data to the importers, stakeholders also proposed that *the EU could adapt the default EFs based on the data reported*. If companies within a region report emission data lower than the identified default and are within the uncertainties stated in the methodology, the EU may increase the default EF for the remaining companies within the region that have not yet reported data.

Apply incentive mechanisms if reported emission intensity is above the intensity standard.

If the reported emission intensity is above the intensity target, the importer could be subject to an incentive mechanism for emissions that exceed the maximum. *The solution that received the most support from stakeholders was to apply a fixed fee per ton of methane above the target* (See Box 55 for alternative options discussed). The implementation of the fee could, for instance, be based on methane avoidance costs or the social cost of methane. The most relevant fee and the underlying methodology to determine it is left for further discussion. The pricing system would also need to be WTO-compliant and, therefore, aligned with fees applied to oil and gas domestically produced that do not meet the EU intensity standard.[70] *The option to deduct from the EU methane fee any methane specific fee paid in another country before import to the EU could be considered. This should also be considered in the context of the gas value chain segments where the fee has been applied.*

Stakeholders also recommended that *the fees collected from imports that do not meet the intensity standard could be used for creating an EU methane fund,* which would be managed by the EU Commission. The EU methane fund could be used for methane emission mitigation in the oil and gas sector for low-income countries. This fund could be invested in capacity building activities, implementation of MRV programs, and other methane abatement projects. *The fund should particularly target projects in developing countries producing oil and gas*.

According to stakeholders, *the design of the fund would need to allow for differentiation between countries in a non-discriminatory way*, meaning that the distinction must be based on a rational basis. To avoid exporting entities postponing the implementation of abatement options waiting to be subsidised, the possibility of funding could be proposed as a co-financing of projects.

While the stakeholders highlighted the possibility of linking the funding mechanism to multilateral development banks and/or development aid agencies, this idea was left for further assessment. The option to direct the fees to the Global Climate Fund could also be evaluated.

Box 5: Other possible incentive mechanisms for the methane emission intensity standard

The solution that emerged from discussions with stakeholders was to impose a fixed fee per ton of methane above the target. Other incentive mechanisms included:

- **To provide a priority access to the EU gas market** to exporting entities that meet the intensity standard. Similar to the proposal in the prescriptive standard, the EU could restrict the import of goods that do not meet the standard or pay a premium for goods that meet the standard.
- **To create a Methane Border Tax Adjustment mechanism** by imposing methane emissions allowances for imports. From a legal standpoint, WTO compliance of such a mechanism "will depend on its design, structure and application" and "can be achieved by ensuring that an internal EU

[70] Independent practitioners from Matrix Chambers, *Proposal for an EU Regulation on methane emissions reduction in the energy sector and Proposed import standard for methane emissions in respect oil and gas imported into the EU: Joint Advice*, 2023

methane pricing mechanism is in place."[71] However, implementing a Methane Border Adjustment Tax directly through the Emission Trading System (ETS) and Carbon Border Adjustment Mechanism (CBAM) could be considered a disproportionate measure since the CBAM aims to address the risk of carbon leakage as a result of production moved offshore and competitiveness losses. In the case of gas, there is limited risk of methane emissions displacement due to production offshoring because 90% of the gas consumed in the EU is already imported.

- **To impose due diligence on the importer** with respect to methane emissions. The due diligence obligations would be differentiated depending on the level of risk associated with the exporting country (assessed through benchmarking). A breach of due diligence could expose the importer to fines. This option has the lowest risk of pushback from the WTO.[72]

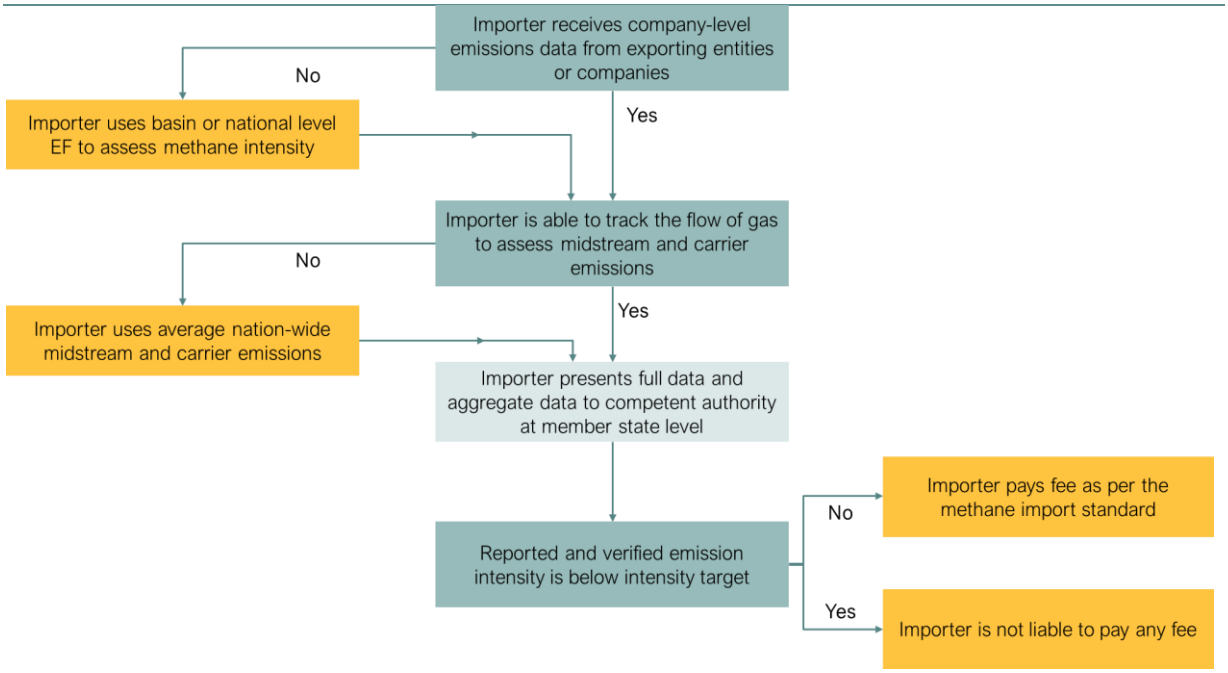
Beyond the concerns raised by the stakeholders and legal advice, the assessment of the applicability and effectiveness of these solutions is left for further work.

Coordinate among multiple parties for monitoring the methane emission intensity of gas entering the EU.

Similar to the prescriptive standard, the proposal by the stakeholders for the intensity standard would require the importer to submit information regarding the country and region of production and transmission of the imported energy, as well as identification of the exporting entities, to the competent authorities of the importing Member State. In addition, the importer is required to provide information on the volume imported and emission intensity associated with it. The emission data is either obtained from the party selling energy to the importer or, if no information is provided, from the default EFs made available by the EU, as depicted in Figure 5. *In the methane intensity standard, the importer declares the emission intensity of the imported products and pays the fee if the intensity is higher than the target*. The importer must also submit the certificates to the competent authorities, delivered by accredited third-party verifiers, stating that the emission data have been validated. If the importer fails to submit these certificates, fines could be imposed and/or the default EFs could be applied instead of the submitted data for evaluating the fees to be paid.

[71] Matrix Chambers, *Proposal for an EU Regulation on methane emissions reduction in the energy sector and Proposed import standard for methane emissions in respect oil and gas imported into the EU: Joint Advice*, 2023
[72] Matrix Chambers, *Proposal for an EU Regulation on methane emissions reduction in the energy sector and Proposed import standard for methane emissions in respect oil and gas imported into the EU: Joint Advice*, 2023

Figure 5: Reporting responsibilities on the importer depending on the emissions data availability.



Source: Carbon Limits summary from stakeholder consultation, 2023

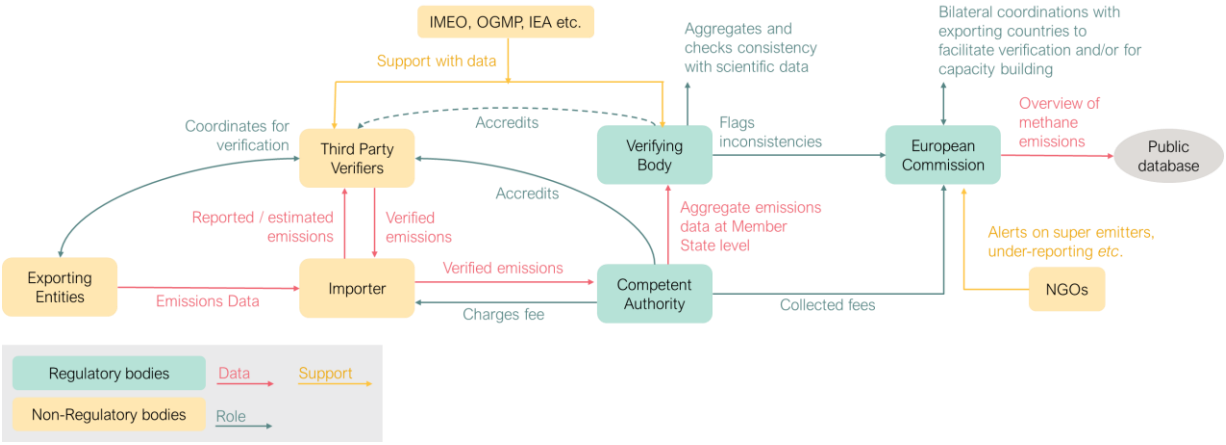
According to the stakeholders, *information reported by the importer could be transmitted by the Member State to the European Commission, which would then be responsible for sharing the information publicly through a transparent database*. The Commission could also analyze the data reported by the importers against satellite data provided by IMEO, other scientific data, and company reporting data provided by OGMP or other international reporting initiatives. In case of discrepancies between the validated reported data and the independent data, the Commission would be empowered to take actions, which could include:

- Open discussions with the competent authorities of the importing Member States to review the process of accreditation of the third-party verifiers;
- Adapting the stringency of the reporting requirements to be fulfilled to obtain certification of emission data; and,
- Review of the methodologies for quantifying emissions.

The identification of the EU body in charge of verifying the reported data, the development of the methodologies to verify those data, and the design of the actions that could be undertaken when deviations are observed are left for further discussion.

The fees collected by the competent authorities of the Member States would then need to be transferred to the EU commission. Stakeholders agreed that it is desirable that fees collected are specifically directed towards methane emission mitigation in non-Member State countries, via the Methane Fund.

Figure 6: Data flow and responsibilities of different bodies in the emission intensity standard



Source: Carbon Limits summary from stakeholder consultation, 2023

The EU needs to assess the reactions to the prescriptive standard and follow methane pricing systems being developed in other countries to narrow down the timeline of implementation.

To be non-discriminatory, an intensity import standard would need to reflect the same standard that is applied to domestic oil and gas production. The last version of the Regulation Proposal does not contain any intensity standard for oil and gas produced within the EU. Therefore, the EU should develop an intensity standard for operations within the EU and after, or simultaneously, extend it to the import standard. There was no consensus among stakeholders on the timeline for implementing the methane intensity standard. The general feedback from stakeholders was to assess the reactions to the prescriptive standard, and to follow methane pricing systems being developed in other countries to narrow down the timeline of implementation. Even though applying an intensity-based import standard first requires that such a standard exists within the EU, this should not be left pending. *The elaboration of such a standard requires significant work on methodology development and data acquisition, which would benefit from being addressed as early as possible.*

3.4. Cross-cutting Elements

Capacity building

Methane emissions management can be difficult because the emissions do not occur systematically, the volumes emitted are variable and their precise measurements/quantifications present some challenges. As part of the discussions, stakeholders highlighted that several exporting countries and stakeholders within the EU might need support building capacity to implement the requirements of a methane important standard. Capacity building is here defined as the "process of developing and strengthening the skills, instincts, abilities, processes and resources"[73] of organizations to support methane emissions management in the oil and gas sector. Supporting capacity building for the relevant actors can facilitate compliance with the import standard and accelerate methane emissions reduction. The following needs were highlighted:

- Capacity building for regulators (inside and outside the EU) supports the creation, implementation, and updating of methane-related regulation, which helps facilitate the implementation of regulatory equivalence;
- Capacity building for companies (importers and producers/exporters) helps improve compliance with national and international laws, including the EU methane import standard. In addition, it can help reduce

[73] United Nations' website, accessed on March 2023: Capacity-Building | United Nations

emissions through identification and implementation of abatement options (LDAR, BATs, *etc*.), and improve the accuracy of reported emissions; and,
- Capacity building for verifiers that meet certain standards and qualifications helps ensure that verification is performed according to EU standards. This is crucial for accrediting verifiers who will help with assessing equivalence or verifying the stated emissions.

Capacity building can take several forms, including but not limited to direct training, preparation and dissemination of case studies, and development of not-legally-binding guideline documents that can assist emissions reporting in a compliant manner (notably for importers).[74] The European Commission is not necessarily required to have a role in delivering these elements, but could provide a roadmap or guidance on the content and format of resources. In addition, the EU could provide financial support for the development and deployment of capacity building material for low-income countries.

External actors could also participate in funding capacity building and in outreach to the relevant recipients of capacity building. This could involve industry associations, development banks, private companies, bi-lateral country cooperation, and international oil companies working with non-operated joint ventures that they might operate in exporting countries. Different topics could be covered by different actors.

Impacts on trade and emissions

There are risks associated with the implementation of the EU methane import standard, particularly regarding the gas market and global methane emissions. This section describes, first, the potential risks, as discussed with the stakeholders, and then provides elements for addressing those risks as part of the roadmap.

Impact on existing natural gas contracts: A majority of the stakeholders consulted stated that the import standard should apply to ongoing contracts as well as contracts signed after the creation of the standard. Some stakeholders pointed out that a large share of the LNG imported to the EU is bought as spot purchase, to which the application of the standard causes no issue. Stakeholders believed that the application of the standard to ongoing contracts should, in principle, not cause issues either, since most contracts have modification clauses[75]. The consequences on imported volumes and prices would, however, depend on the details of the contracts and on negotiations between importers and exporters. The stakeholders anticipate that it may take some time for the producing and/or exporting companies to understand the costs associated with compliance to the EU import standard and how these costs can be integrated.

Impact on natural gas trade and security of supply: Not all stakeholders agreed on the impacts of the import standard on traded volumes of gas. At least one of the two following conclusions was, however, supported by many of the stakeholders:

- The standard will add complexity to the LNG market because the trade routes will adapt to the new economic incentives. The pipeline gas market will be less impacted because the export routes are not flexible; and,
- The impact of the standard on the risk for energy security in the EU must be further assessed. The EU represents a significant share of the imported gas globally (about 25% of LNG imports between 2020 and 2022[76]) and has a high willingness to pay. Therefore, if the LNG market is not tight, the risk of additional constraints deterring exporters from the EU market is likely low. However, the import standard may impact gas price within the EU, due to the levied fees by the importers, that could get pushed to

[74] This has for instance been done with the publication of a User Manual for the EU ETS reporting system Emission Trading System – MRV reporting (europa.eu)
[75] Matrix Chambers assessed the risks of legal backlash to be low because, unless the measure involves price cap, the EU's right to adopt sanitary or technical regulations cannot be affected by the existence of private commercial contracts. Residual risks still exist, notably if investment treaties are involved.
[76] IEA, *Gas Market Report, Q4-2022 including Global Gas Security Review 2022*, 2022. Retrieved from: https://www.iea.org/reports/gas-market-report-q4-2022

the end consumers. The extent and magnitude of the impacts on prices, inside and outside the EU, have not been discussed in depth and are therefore left for further assessment.

Impact on global methane emissions: Beyond reducing the footprint of the gas consumed in Europe, the objective of the standard would be to reduce global methane emissions. One main risk discussed by the stakeholders is that the import standard could enable the EU to source "clean" gas without having any significant impact on global emissions. This would be caused by a reshuffling of natural gas supply globally: gas associated with high emissions could be exported to regions with fewer constraints or used domestically, while gas with lower emission intensity could be sent to the EU (a situation henceforth referred to as a "methane leakage"). Under certain circumstances, imposing a fee on methane emissions could even increase the global emissions because new shipping routes between exporting and importing regions might become longer, which could increase the gas loss during transmission and the boil-off during shipping. In addition, there is a concern that companies exporting to the EU would prefer to divest their highest emitting assets by selling them to other companies instead of implementing abatement options for their high-emitting assets.

Mitigate risks associated with the impacts on trade and emissions by opening dialogues between the EU, other importing countries, and the exporting entities.

Stakeholders suggested that the risk of methane leakage can be monitored by the EU through analysis of data reported by countries and companies (for the prescriptive standard equivalence), data reported by importers and external data provided by IMEO, the IEA, OGMP, *etc.* Multi-year analysis of the data, with a reconciliation process, could indicate to what extent practices are improving and methane emissions are decreasing globally, following the import standard.

To incentivize gas utilisation, some stakeholders highlighted the need for agreements between the EU and exporting countries, such as the "you collect, we buy" approach.[77] Importers could commit to buying gas previously vented or flared, therefore incentivizing producers to implement emissions reduction programs and end routine flaring. However, some stakeholders pointed out that establishing long-term contracts might prevent producers from implementing further methane emissions abatement, since the outlet for their product is guaranteed.

Stakeholders highlighted that the risks associated with the impacts on trade and emissions can be mitigated by opening dialogues between the EU and both exporting and other importing countries.

- *Through dialogues with exporting countries*, the EU can work on aligning regulations and verification practices. This would make the standard more acceptable and would incentivize companies to adopt the standard—or an equivalent—rather than redirecting their export to another region with less constraints. Bilateral agreements could facilitate the cooperation between third-party verifiers accredited by the EU and verifiers in the exporting countries to help monitor the implementation of the prescriptive and the intensity standards.
- *By opening dialogues with other importing countries or regions*, the EU can push for adopting similar import standards. If importing regions align their requirements for the gas they import, the risk for methane leakage decreases as it gets globally more challenging, or less profitable, to export gas that does not meet the standard. Therefore, the producers and exporters would have more incentive to improve their practices and decrease their emissions. The standard would thus have more impact on global methane emissions. In addition, an alignment of the importing regions might have a positive impact on gas prices for importers in the EU. Stakeholders identified Eastern Asia as another main importing region and, therefore, as a priority region with which it could be interesting to establish agreements.

[77] IEA, *How to Avoid Gas Shortages in the European Union in 2023*, 2022. Retrieved from: https://www.iea.org/reports/how-to-avoid-gas-shortages-in-the-european-union-in-2023

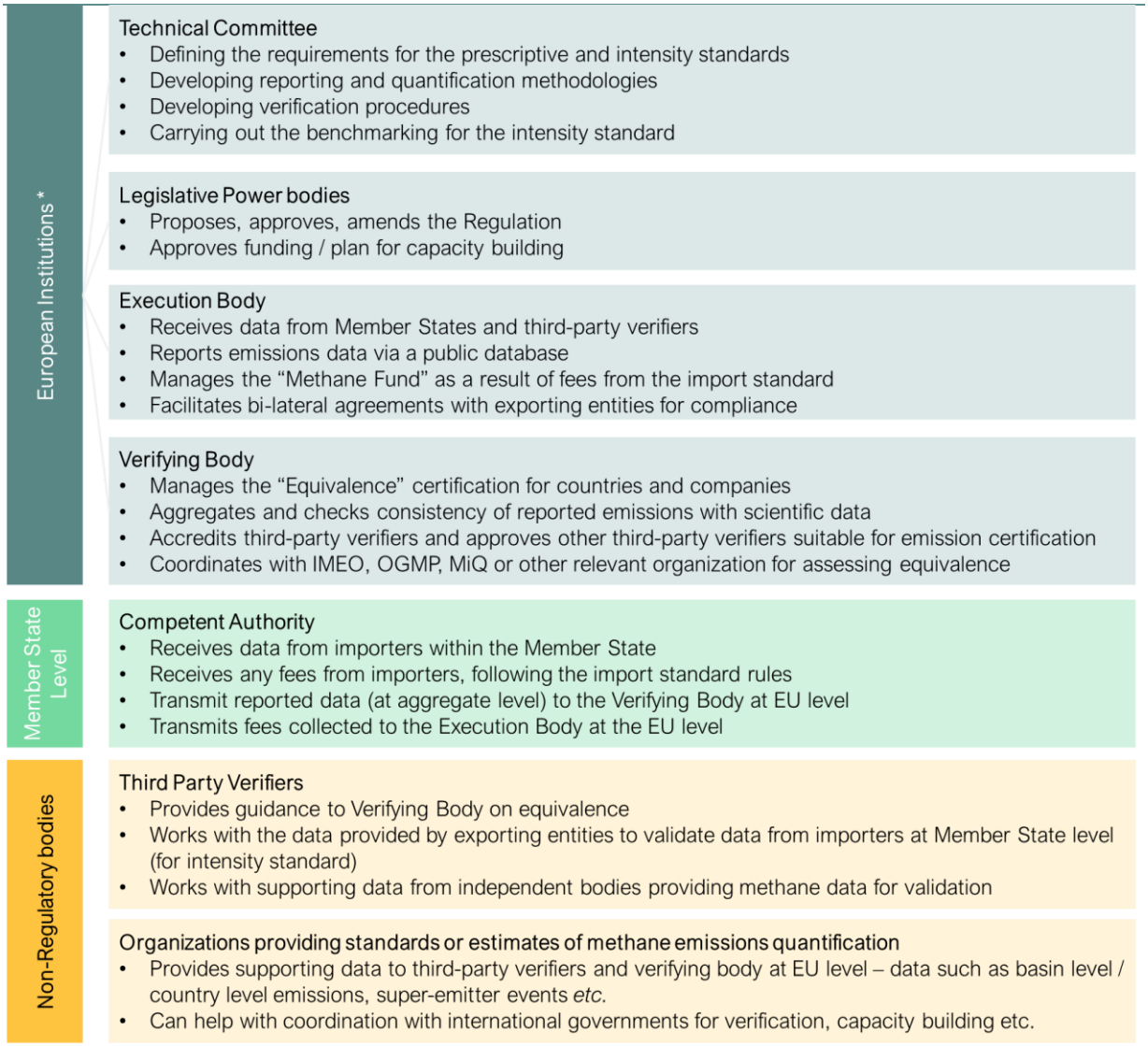
Finally, a deeper evaluation of the risks associated with the import standard would allow the EU to design its import standard in a way that minimizes economic drawbacks and maximizes the reduction of global methane emissions. Therefore, further analysis could be conducted on the interconnections between the stringency and incentive mechanisms of the import standard and the volume and price of gas traded globally and regionally.

4. Summary of the EU Methane Import Standard Roadmap

Having described the prescriptive standard and the intensity standard in detail, this section summarizes the points highlighted in the previous sections and identifies the potential roles and responsibilities of the actors involved in implementation of the methane import standard.

Discussions with stakeholders about the design and implementation of a methane import standard underlined a series of roles and responsibilities that would likely fall on the European Commission, which have been summarized in Figure 7.

Figure 7: Roles and responsibilities of bodies and stakeholders involved in the methane import standard development and implementation.



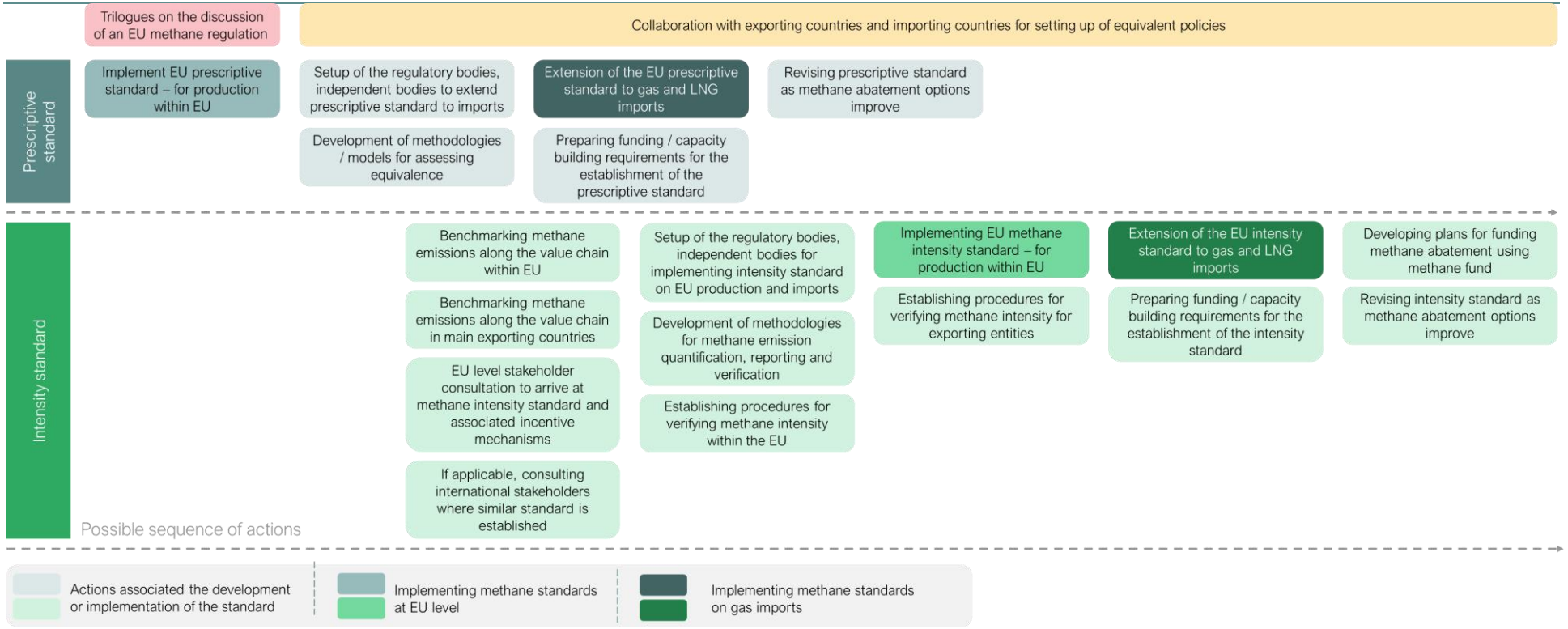
*The roles presented in this Figure have been divided by thematic fields and are not meant to be prescriptive. The splitting of roles between different parties is up to the discretion of the European Institutions.

Source: Carbon Limits summary from stakeholder consultation, 2023

One aspect currently not covered under roles and responsibilities is the implementation and maintenance of an IT system to support the prescriptive standard and intensity standard. *The implementation of the methane import standard is expected to require processing large amounts of data regarding practices (for the prescriptive standard) and emissions (for the intensity standard).* The design and management of this system were not discussed by stakeholders and are therefore left for further work.

Several intertwining cross-sectoral efforts would need to be considered in the development of a methane import standard, including legal and regulatory processes, economics and trade, emissions quantification, and reporting, among others. To develop a comprehensive import standard, multiple stakeholders should agree on a step-by-step procedure. The key actions that need to be taken to develop and implement an import standard have been summarized in Figure 8.

Figure 8: Key actions to be taken for the development and implementation of an EU methane import standard.



Source: Carbon Limits summary from stakeholder consultation, 2023

The scale of the challenge for developing and implementing a methane import standard cannot be understated. While several expert viewpoints allowed for the design of this roadmap, challenges remain at each stage of the roadmap, which are described in Section 3 of this report. Further work is necessary to tackle the challenges and to refine the findings of this study. Given the complexity of the topic, early action following the trilogues to implement a methane import standard is critical if the EU is to achieve its climate goals.

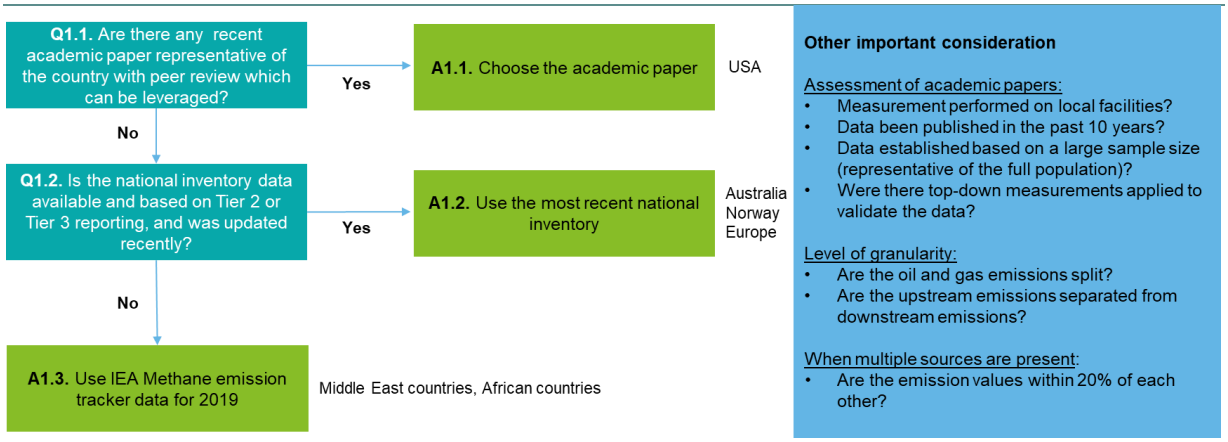
Appendix A: EF Estimation Methodology

The emission intensities presented in this section are from a study done by Carbon Limits in 2022, using data from 2019. Not all countries exporting oil and gas to the EU were assessed as part of the 2022 study. They have been presented in this section to provide context to the topic of discussion.

This section provides an overview of the estimated methane EF for countries exporting natural gas and LNG to Europe based on prior work from Carbon Limits and other publicly available information. The methane EFs were assessed using current best understanding of methane emissions from the oil and gas sector in the countries covered in the analysis. Upstream and downstream (transmission) emissions were considered for pipeline gas exporting countries. For LNG exporting countries, liquefaction, LNG shipping, and regasification emissions were also considered. Information from country-level academic papers with significant measurements and estimates and emissions reported to the UNFCCC[78] and by the IEA methane tracker[79] were leveraged to develop a concrete understanding of emissions from the gas sector in each country. Gas production and consumption data from the BP statistical review[80] were then used to calculate the EF. Of note, several of the countries assessed do not have well-documented procedures in place to quantify and report methane emissions. A conservative approach, using the best available sources of information, was used to estimate these EFs.

Since the first step in estimating the EF was to choose the best available source of emissions data for the country, a decision tree was used to select the best available source for each country, as depicted in Figure 9. Several other criteria were also considered in selecting the source and to obtain the EF in the appropriate format.

Figure 9: Decision tree for assessing EFs of exporting countries



Source: Carbon Limits analysis for Hydrogen4EU, 2022

The following steps were then applied to estimate the EF for each of the gas value chain segments:

- Upstream EF: Emissions from exploration and production of gas, gathering and boosting stations, and processing of natural gas were summed up separately and divided by the volume of associated and non-associated gas produced in the country to obtain the upstream EF for each country.
- Downstream EF: Only transmission emissions were considered for gas and LNG exporting countries, while for importing countries, both transmission and distribution emissions were considered.

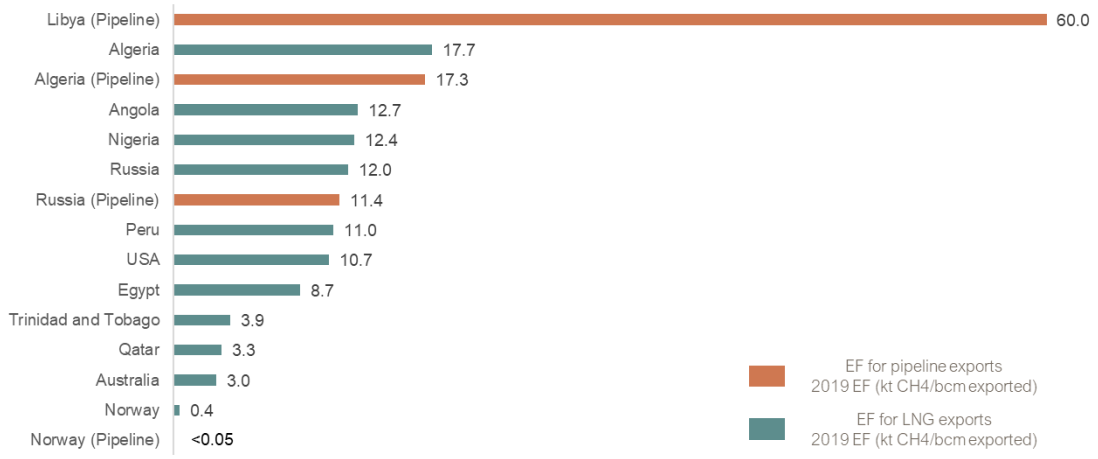
[78] UNFCCC, *Greenhouse Gas Inventory Data*, 2019, https://di.unfccc.int/detailed_data_by_party
[79] IEA, *Methane tracker*, 2019, https://www.iea.org/data-and-statistics/data-tools/methane-tracker
[80] BP, *Statistical Review of World Energy*, 2020, https://www.bp.com/en/global/corporate/energy-economics/statistical-review-of-world-energy.html

Transmission and distribution emissions were each divided by the total volume of gas produced and/or imported into the countries to estimate the downstream EF.

- **LNG EF**: Emissions from LNG liquefaction and LNG carrier are associated with the exporting country EF, while emissions from LNG unloading and regasification are associated with the importing country EF. Carbon Limits' internal model was used to estimate the LNG carrier emissions. The LNG model was based on several scientific papers and developed in consultation with stakeholders in the maritime industry and used average travelling days from the LNG exporting country to Europe, distance between the exporting region and Europe, and ship speed to estimate the EF for LNG carriers. Considering the lack of data in this segment, a report from Marcogaz was used to obtain the EF for LNG liquefaction and regasification.[81] Total emissions were divided by volume of LNG transported to obtain the LNG EF.

Figure 10 summarizes the estimated methane EF in 2019 for the countries assessed.[82] Using the share of gas and LNG flowing into the EU and the estimated EFs, **the net EF of pipeline natural gas and LNG entering the EU in 2019 is estimated to be 8.7 ktCH$_4$/bcm and 9.1 ktCH$_4$/bcm respectively.[83]** In comparison, the EF of pipeline gas and LNG EF for Norway[84] is as low as 0.04 ktCH$_4$/bcm and 0.4 ktCH$_4$/bcm respectively.

Figure 10: Methane EF of natural gas and LNG exporting countries (2019)



Source: Carbon Limits analysis for Hydrogen4EU, 2022

[81] Marcogaz, *Survey Methane Emissions for LNG Terminals in Europe*, 2018, Retrieved from: https://www.marcogaz.org/publications/survey-methane-emissions-for-lng-terminals-in-europe/
[82] Carbon Limits analysis using data from bp, *Statistical Review of World Energy*, 2020, https://www.bp.com/en/global/corporate/energy-economics/statistical-review-of-world-energy.html
[83] Carbon Limits analysis combining assessment done for the Hydrogen4EU study and data from bp Statistical Review of World Energy, 2020
[84] As of today, Norway is noted to have the lowest EFs associated with exported pipeline gas and LNG (to the EU), IEA, *Driving Down Methane Leaks from the Oil and Gas Industry: A Regulatory Roadmap and Toolkit*, 2021, Retrieved from: https://www.iea.org/reports/driving-down-methane-leaks-from-the-oil-and-gas-industry

Appendix B: IEA Policy Summary and International Pledges

The average methane EF in a country is highly dependent on the methane-related policies established in the country of production. The IEA summarizes the methane abatement-related policies in several oil and gas producing countries. Apart from the country- and state-level legislations that apply, international methane-related pledges encourage countries and oil and gas producing companies to set targets for methane abatement. A summary of policies and international pledges associated with gas and LNG exporting countries have been summarized in Table 2 to Table 5.

Table 2: Summary of prescriptive methane policies in some countries exporting oil/gas to EU (2019)

Prescriptive methane policies: policies that direct regulated entities to undertake or not to undertake specific actions or procedures.

	Permitting requirements	Technology Standard	Enforcement and related provisions
Algeria			●
Angola	●		●
Egypt			●*
Libya			
Nigeria	●	●	
Norway	●		
Peru			
Qatar		●	●
Russia	●		
Saudi Arabia	●		●
Trinidad and Tobago			
UAE	●		
USA	●	●	

*Egypt has launched an Oil and Gas Methane Roadmap framework with core elements of a comprehensive methane reduction approach and will complete a specific Oil and Gas Methane Roadmap for Egypt in 2023.

Two other prescriptive methane policy types specified by the IEA are policies on Leak Detection and Repair (LDAR) and restrictions on flaring and venting. However, such policies have not been put in place yet in the assessed countries.

Permitting requirements: granting authorization for specific operations or procedures. Permits also include conditions that limit their validity, which may be temporal, technological or spatial.

Technology standard: Requirements that outline the equipment, technology or procedure that must be employed in a regulated activity .This includes best available technology (BAT) requirements, which refer to a benchmark technology or procedure for reducing emissions.

Enforcement and related provisions: Enforcement involves setting enforcement policy, specify sanctions or outline procedural requirements. Regulatory inspection provisions authorise officials to conduct onsite verification in order to assess compliance and enforce regulations. Auditing provisions establish verification processes whereby officials or third parties observe and report on the validity of the information provided by operators.

Source: Carbon Limits design, using IEA's Regulatory Roadmap and Toolkit for Driving Down Methane Leaks from the Oil and Gas Industry,[85] 2022

Table 3: Summary of economic methane policies in some countries exporting oil/gas to EU (2019)

Economic methane policies: induce action by applying penalties or introducing financial incentives for certain behaviours

	Charges on emissions	ETS or certified reductions	Financial incentives
Algeria			
Angola			
Egypt			
Libya			
Nigeria			
Norway	●		●
Peru			
Qatar			
Russia	●		
Saudi Arabia			
Trinidad and Tobago			
UAE			
USA	●	●	●

Charges on emissions: Taxes, fees or other charges that are levied on emissions, including nationwide carbon taxes applied to methane or royalties and other charges imposed on flared, vented or unaccounted for gas.

Emissions Trading System (ETS) or certified reductions: ETS typically define an emissions limit and allocate emissions allowances among the regulated community. These allowances can be traded among companies according to their needs and capabilities. Certified reduction credits allow entities that go beyond established requirements to be accredited as voluntary methane reductions, which may be traded.

Financial incentives: Loans, grants and other financial incentives includes all types of positive financial incentives that governments pay provide to reduce emissions. This could include direct provision of loans or grants to invest in reduction measures or other incentives such as allowing cost recovery for abatement costs via reductions in royalties, taxes or fees.

Source: Carbon Limits design, using IEA's Regulatory Roadmap and Toolkit for Driving Down Methane Leaks from the Oil and Gas Industry,[86] 2022

[85] IEA, *Regulatory Roadmap and Toolkit for Driving Down Methane Leaks from the Oil and Gas Industry*, 2021, Retrieved from: https://www.iea.org/reports/driving-down-methane-leaks-from-the-oil-and-gas-industry

[86] IEA, *Regulatory Roadmap and Toolkit for Driving Down Methane Leaks from the Oil and Gas Industry*, 2021, Retrieved from: https://www.iea.org/reports/driving-down-methane-leaks-from-the-oil-and-gas-industry

Table 4: Summary of information-based instruments in some countries exporting oil/gas to EU (2019)

Information-based instruments: designed to improve the state of information about emissions, and may include requirements that regulated entities estimate, measure and report their emissions to public bodies.

	Emission estimates & quantification	Measurement requirements	Reporting requirements	Public disclosure
Algeria				
Angola				
Egypt				
Libya				
Nigeria	●		●	
Norway	●	●	●	●
Peru	●		●	
Qatar	●	●		
Russia				
Saudi Arabia				
Trinidad and Tobago				
UAE			●	
USA	●		●	●

Emissions estimates and quantification: Requirements to estimate methane emissions through the use of activity factors and emission factors.

Measurement requirements: Mandatory data collection for activities, equipment or production flows, requiring operators to record, process and submit requested information. They support the definition of activity or emission factors that are specific to measured devices, facilities and settings.

Reporting requirements: requiring regulated entities to record and report required information such as reporting emissions monitoring data, key events like accidents, flaring, state of facilities or operational data. Regulations can indicate if information must be disclosed to the public or sent to regulatory authorities.

Public disclosure: Requirements for regulated entities to share specified information related to methane emissions with the public (such as online, or upon public request). This also includes instruments that require public bodies to make specified information received from regulated entities available to the public.

Source: Carbon Limits design, using IEA's Regulatory Roadmap and Toolkit for Driving Down Methane Leaks from the Oil and Gas Industry,[87] 2022

Table 5: Summary of participation in international methane pledges in countries exporting gas to EU (exporters in 2019)

International methane related pledges: International methane related pledges encourage (voluntary action) countries and oil and gas companies set targets for methane abatement

	Zero routine flaring	Methane Pledge	Methane Alliance
Algeria			
Angola	●		
Egypt	●	●	
Libya		●	
Nigeria	●	●	●
Norway	●	●	
Peru	●	●	
Qatar	*●	●	**
Russia	●		
Saudi Arabia	●	●	
Trinidad and Tobago		●	
UAE		●	
USA	●	●	

*Qatar Petroleum is part of the zero routine flaring initiative
**Though not directly part of the alliance, Qatar's sustainability strategy states that Methane intensity of 0.2% by 2025 will be aimed for. Source: Qatar Energy Sustainability Strategy, 2021

Zero Routine Flaring by 2030 initiative: introduced by the World Bank as part of the Global Gas Flaring Reduction Partnership (GGFR), the initiative participants commit to (a) not routinely flare gas in new oil field developments and (b) to end routine flaring in existing (legacy) fields as soon as possible no later than 2030.

Global Methane Pledge initiative: led by the USA and EU, participants joining the pledge agree to take voluntary actions to contribute to a collective effort to reduce global methane emissions at least 30 percent from 2020 levels by 2030.

Global Methane Alliance initiative: introduced by the United Nations Environmental Porgramme (UNEP) and Climate and Clean Air Coalition (CCAC), the participants joining have two options as possible targets:

- Absolute reduction target of at least 45% reduction in methane emissions by 2025 and 60% to 75% by 2030.
- Intensity target of "near-zero" methane emissions, targeting a CH4 emission intensity of 0.25% or below.

Source: Carbon Limits design, using multiple sources,[88,89,90,91] 2022

[87] IEA, *Regulatory Roadmap and Toolkit for Driving Down Methane Leaks from the Oil and Gas Industry*, 2021, Retrieved from: https://www.iea.org/reports/driving-down-methane-leaks-from-the-oil-and-gas-industry
[88] The World bank, *Zero Routine Flaring by 2030*, 2015, Retrieved from: https://www.worldbank.org/en/programs/zero-routine-flaring-by-2030/endorsers
[89] Global Methane Pledge, 2021, Retrieved from: https://www.globalmethanepledge.org/
[90] Climate and Clean Air Coalition, *Global Methane Alliance*, 2019, Retrieved from: https://www.ccacoalition.org/en/activity/global-methane-alliance
[91] Qatar Energy, *Sustainability Strategy*, 2021, Retrieved from: https://www.qatarenergy.qa/en/Sustainability/Pages/default.aspx

Appendix C: Building Blocks for the Development of a Methane Import Standard

Several intertwining cross-sectoral efforts need to be considered in the development of a methane import standard, including legal and regulatory processes, economics and trade, emissions quantification, and reporting, among others. These efforts were thematically broken down into 11 sub-topics, called "building blocks." Even though they remain interconnected, the building blocks were designed to be treated separately.

Each building block was assigned an intended outcome and one or several starting point(s). The starting points were based on relevant sections of the Regulation Proposal, existing systems, or regulatory precedents. The building blocks were used to structure workshop discussions with relevant experts (see Appendix D), and each building block was tackled in independent small-group conversations. Series of questions or challenges were also added to clarify the scope of each block and fuel workshop discussions.

The development of a methane import standard involves four main axes, which were further broken down into the 11 building blocks:

- Blocks 1 to 3 deal with the accounting of methane emissions.
- Blocks 4 to 6 deal with the definition of the emission standard and compliance.
- Blocks 7 to 9 deal with the regulatory bodies and enforcement.
- Blocks 10 and 11 deal with the impacts on trade and emissions.

Table 6: Building blocks used for discussing the elaboration of a methane import standard.

Building block	Main topic	Suggested outcome
Building block 1: Quantifying and verifying emissions.	How to quantify methane emissions in different scenarios (notably in terms of how much data is provided by the various actors of the supply chain) and how to ensure that reported emissions are as close as possible to actual emissions.	The EU has methodology documents for different situations such as: - Methodology for exporting companies to assess and report the whole value chain emissions. - Verification procedures for emissions reported by exporting companies. - If no information from exporting company: methodology to estimate emissions using default EF at country and or basin level (total value chain emissions).
Building block 2: Emission attribution and boundaries.	How to link and track the emissions occurring along the value chain to the gas or LNG being imported.	At the time of purchase, the EU has a procedure in place to track: - the data that needs to be reported for methane emissions. - how the data would flow between exporting party, importing party, and regulatory body in the EU.
Building block 3: IT systems	Data management at the European level.	The EU has a robust IT system in place to track the emissions imported into the EU with the right attribution.

Building block 4: Methane performance standards.	The type of performance standard that could be put in place: it could be a regulatory standard, a technological standard such as use of BATs, an intensity standard or a combination of these.	The EU has a methane performance standard in place for gas/LNG imported into its borders, which could take the form of: - an emission intensity per bcm of gas/LNG imported into EU borders **and/or** - technology standards for oil and gas operations.
Building block 5: Economic incentive systems.	The economic incentives that could be put in place to make importers respect the standard. This could range from a prohibition to place the product on the market, to a tax, to a fee.	The EU has incentive mechanisms to force the respect of the standard. The plan for enforcement would include a timeline for updating the mechanism.
Building block 6: Non-compliance.	Non-compliance refers to cases where emissions were not reported properly, or cases where a technology standard was said to be followed but was not.	The EU has a plan of action for tracking non-compliance in reporting of emissions/ practices in place and imposing suitable penalties.
Building block 7: Roles and responsibilities.	Identifying the different bodies necessary to design the policies, prepare standard operating procedures, methodologies *etc.*	The EU has bodies in place for handling the design, implementation, and execution of the methane import strategy.
Building block 8: Enforcement and reporting.	Identifying who will be responsible for overseeing the reporting and verification, and enforce the policy, from the government viewpoint. Also identifying when a part would be considered non-compliant from the policy standpoint.	The EU has identified a body that will perform the verification and has a procedure for handling the outcome of the verification process. The EU should also have a compliance document in place that informs the complying party of all information necessary to do the reporting.
Building block 9: Capacity building.	Identifying stakeholders that could benefit from capacity building to facilitate compliance with the standard and providing methane emissions reduction along the value chain. Determining how the capacity building activities could be funded and organized.	The EU has a comprehensive plan of action to provide capacity building for stakeholders from the oil and gas sector to ensure the reporting and methane pricing implementations are executed appropriately.
Building block 10: Impacts on gas/LNG trade.	How the gas and LNG trade will be affected by the standard, notably considering global market dynamics and existing contracts between EU importers and exporters abroad.	The supply of gas/LNG to the EU is secured for the present and future. The EU has an overview of the implications of the regulation on present and future gas prices and supply chains.
Building block 11: Impacts on global methane emissions.	The impact of the standard on global methane emissions, to make sure that emissions embedded in gas imports are not simply reshuffled between the EU and other importing regions.	Methane emissions due to gas/LNG production decreases globally and the EU has a monitoring plan to assess the effect of the methane import standard.

Appendix D: List of Participating Stakeholders

This section provides the list of stakeholders who participated in the workshop and/or the post-workshop interviews. The conclusions presented in the report summarize the overall findings of the discussions between stakeholders and may not reflect the individual viewpoints of the stakeholders or their affiliated organizations.

Table 7: Stakeholders involved in the workshop and/or the post-workshop interviews

Affiliation	Name
Stakeholders[92]	
Boling energy advisors	Mark Boling
Columbia Center on Global Energy Policy	Anne-Sophie Corbeau
Center for Strategic and International Studies (CSIS)	Ben Cahill
Food & Water Action Europe (FWAE)	Enrico Donda
International Energy Agency (IEA)	Tomás de Oliveira Bredariol
International Methane Emissions Observatory (IMEO)	Andris Piebalgs
International Methane Emissions Observatory (IMEO)	Anonymous
Kayrros	Christian Lelong
MiQ	Saima Chaudry Yarrow
Norwegian University of Science and Technology (NTNU)	Ruud Egging-Bratseth
Oxford Institute of Energy Studies	James Henderson
Oxford Institute of Energy Studies	Jonathan Stern
United Nations Environmental Programme (UNEP)	Anonymous (x1)
University of Texas	Arvind Ravikumar
Organization 1	Anonymous (x2)
Organization 2	Anonymous (x1)
Organization 3	Anonymous (x1)
Organization 4	Anonymous (x2)
Organization 5	Anonymous (x1)
Organization 6	Anonymous (x1)

[92] The affiliation and name of the stakeholders is only displayed for the ones that expressed their consent.

Organization 7	Anonymous (x1)
Organization 8	Anonymous (x1)
Members of CATF	
CATF	Alejandra Muñoz
CATF	David McCabe
CATF	Jonathan Banks
CATF	Zitely Tzompa Sosa
CATF	Alessia Virone (workshop moderator)
CATF	Felicia Douglas (workshop moderator)
CATF	Ioannis Binietoglou (workshop moderator)
Legal team	
Matrix Chambers	Kate Cook
Matrix Chambers	Luis González García
Matrix Chambers	Toby Fisher

Appendix E: Workshop and interview organization

To gather expert viewpoints on the different aspects of the methane import standard, CATF organized a workshop, which was held in Madrid, Spain, on February 14, 2023. 29 stakeholders participated in the workshop, of which nine joined remotely. The stakeholders were affiliated with more than 15 different organizations including, but not restricted to, NGOs, academia, data companies, and law firms (see Appendix D). Stakeholders who participated in the workshop included experts in methane emissions quantification and attribution, oil and gas trade and economics, EU policy, energy policy, and trade and environmental law.

The workshop took place during one full day, divided into two halves (morning and evening), and was structured around the building blocks described in Appendix C. The stakeholders were divided into five teams to discuss the building blocks in small groups. Three of the participants were independent practitioners from Matrix Chambers, contracted by CATF, and were not attributed to one specific team but rather provided support and insights to all teams on legal aspects.

The morning and the evening halves of the workshop were both organized around three forty-minute discussion sessions. During the first session, each stakeholder team discussed a separate building block. For the second and third sessions, the topics rotated between the stakeholder teams so that, in the end, each building block was discussed by three different stakeholder teams. Five moderators from CATF and Carbon Limits were responsible for organizing the discussions. Each moderator oversaw two building blocks and was responsible for fuelling the discussions by reminding stakeholders of the starting point, the expected output, and the main questions/issues of the building block; keeping balanced conversations between stakeholders; helping to reformulate and clarify the ideas that were expressed; and taking notes and summarizing the outcomes of the discussions.

At the end of the day, the moderators summarized the main findings of the teams on each building block, emphasizing consensuses and disagreements and identifying solutions and challenges. The outcomes of the workshop were processed by Carbon Limits and discussed again with the stakeholders during interviews.

CARBON LIMITS

March 2023

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