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Article

EU Methane Regulation and its impact on LNG imports

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ABSTRACT

The EU Methane Regulation entered into force on 4 August 2024. It creates rules and obligations on measurement-based Monitoring, Reporting, and Verification of methane emissions of relevant activities, and on Leak Detection and Repair, and introduces limits on routine venting and flaring within the European Union (EU). In addition, and importantly for this article, it creates the first import-related requirements on methane emissions for imported fuels globally. This article will focus on the impact of the Methane Regulation on Liquified Natural Gas (LNG) imports into the EU. In this respect, the Methane Regulation creates far-reaching and difficult-to-implement obligations. The concerns for the LNG industry and imports into the EU are that (i) many of the central rules are not set out in the Methane Regulation and will be provided in the years to come and (ii) some of the key concepts and key provisions lack clarity and are open to various interpretations. As we will discuss in detail, the uncertainty created by the Methane Regulation will make contract negotiations more difficult and will negatively affect the security of gas supply within the EU.

INTRODUCTION

Regulation (EU) 2024/1787 on the reduction of methane emissions in the energy sector was published in the Official Journal of the European Union (EU) on 15 July 2024 ('Methane Regulation')[1] and entered into force on 4 August 2024. It aims to reduce direct emissions of methane from oil and gas operations (including upstream exploration and production infrastructure, gas transmission and distribution assets, gas storage facilities, and LNG processing plants and from plugged and abandoned wells), as well as coal mines (both active open-cast and underground mines and closed and abandoned underground mines).

It creates rules and obligations on Monitoring, Reporting, and Verification (MRV) of methane emissions from relevant activities and on Leak Detection and Repair, and restricts any unnecessary or routine venting and flaring within the EU. In addition, and importantly for the present purposes, it creates the first import-related requirements globally on methane emissions associated with imported fuels.

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[1] Regulation (EU) 2024/1787 of the European Parliament and of the Council of 13 June 2024 on the reduction of methane emissions in the energy sector and amending Regulation (EU) 2019/942 (*OJ* L, 2024/1787, 15 July 2024).

This article will focus on the impact of the Methane Regulation on LNG imports into the EU. In this respect, the Methane Regulation creates obligations that are far-reaching and difficult to implement. Some of the main concerns for the LNG industry are that (i) many of the central rules are not set out in the Methane Regulation and will be determined by the European Commission in the years to come and (ii) some of the key concepts and key provisions lack clarity, leaving crucial issues open to interpretation. It is therefore of paramount importance that the European Commission acts rapidly to adopt the delegated instruments foreseen by the Regulation and that national implementation by the EU Member States is carried out uniformly, and in a way that provides more clarity on how the Methane Regulation will be applied and enforced.

REGULATORY MEASURES WITH A DIRECT OR POTENTIAL IMPACT ON LONG-TERM LNG AGREEMENTS

GHG emissions regulations continue to evolve globally, and governments are increasingly implementing legislation that will impact global LNG trade. Net-zero targets and established carbon markets aside, there are several key pieces of legislation that have been recently adopted or are currently being drafted will impact responsibilities and liabilities for Greenhouse Gas (GHG) emissions. The global leader in this respect is the EU, where examples of current laws with consequences for LNG trade include, in addition to the Methane Regulation, the Emissions Trading System (EU ETS) and its extension to maritime shipping,[2] as well as a restriction on future long-term natural gas contracts.[3] All these measures, as well as others, are designed to contribute to the legally binding 2050 net-zero target of the EU.[4]

A specific area of regulatory development concerns methane emissions. The Global Methane Pledge[5] was launched at COP26 in 2021 by the EU and the USA, with 158 other participants having since joined. Both EU and US[6] laws now regulate upstream methane leakages. The introduction of legislation targeting methane emissions will significantly impact the LNG market relative to many other sectors and industries that feature lower levels of methane intensity. In particular, these measures will have a direct impact on imports of LNG into the EU market, including the contractual arrangements in LNG sale and purchase agreements, which will need to be adapted to address still evolving, new realities.[7]

REGULATING METHANE EMISSIONS

The US Methane Regulation

Much like the EU, the USA is actively taking measures to curb methane emissions from oil and gas operations. It has introduced rules at a federal level on accurate monitoring, reporting, and verification as well as the reduction of methane emissions from oil and gas operations.[8]

[2] Directive 2003/87/EC of the European Parliament and of the Council of 13 October 2003 establishing a system for greenhouse gas emission allowance trading within the Union and amending Council Directive 96/61/EC (*OJ* L 275 25 October 2003, p 32).

[3] art 31(3) of Directive (EU) 2024/1788 of the European Parliament and of the Council of 13 June 2024 on common rules for the internal markets for renewable gas, natural gas, and hydrogen, amending Directive (EU) 2023/1791 and repealing Directive 2009/73/EC (*OJ* L, 2024/1788, 15 July 2024). The provision refers to unabated natural gas, which means gas combusted without capturing the resulting carbon dioxide.

[4] art 2 of the Regulation (EU) 2021/1119 of the European Parliament and of the Council of 30 June 2021 establishing the framework for achieving climate neutrality and amending Regulations (EC) No 401/2009 and (EU) 2018/1999 ('European Climate Law'), (*OJ* L 243, 9 July 2021, p 1–17).

[5] See <https://www.globalmethanepledge.org/> accessed 15 August 2024.

[6] Standards of Performance for New, Reconstructed, and Modified Sources and Emission Guidelines for Existing Sources: Oil and Natural Gas Sector Climate Review, 40 CFR Part 60 [EPA-HQ-OAR-2021§-0317; FRL-8510-01-OAR].

[7] For a more detailed assessment of this, see K Talus, 'Adapting International Natural Gas and LNG Agreements in the Light of the Energy Transition' (2023) 16 Journal of World Energy Law & Business 6, 492–505.

[8] Eg, see Standards of Performance for New, Reconstructed, and Modified Sources and Emissions Guidelines for Existing Sources: Oil and Natural Gas Sector Climate Review, 40 CFR pt 60 (December 2023) <https://www.epa.gov/system/files/documents/2023-12/eo12866_oil-and-gas-nsps-eg-climate-review-2060-av16-final-rule-20231130.pdf> accessed 15 August 2024 and Greenhouse Gas Reporting Rule: Revisions and Confidentiality Determinations for Petroleum and Natural Gas Systems, 88 Fed Reg 50282 (August 2023) <https://www.govinfo.gov/content/pkg/FR-2023-08-01/pdf/2023-14338.pdf> accessed 15 August 2024.

The Methane Emissions Reduction Program of the US Inflation Reduction Act (IRA) of August 2022 introduced a methane fee for oil and gas companies (the so-called Waste Emission Charge or WEC).[9] Section 60113 of the IRA amended the Clean Air Act (CAA) by adding a new section 136, 'Methane Emissions and Waste Reduction Incentive Program for Petroleum and Natural Gas Systems.' The new CAA section 136 regulates three important elements of the WEC programme: (i) waste emissions thresholds; (ii) netting of emissions across different facilities; and (iii) exemptions for certain emissions and facilities.

CAA section 136(c) directs the Administrator of the US Environmental Protection Agency to impose and collect a 'Waste Emissions Charge' on methane emissions that exceed statutorily specified waste emissions thresholds from owners or operators of applicable facilities.[10] From 2024, this charge is set at $900/tonne rising to $1500/tonne in 2026 and beyond.[11]

The EU's Methane Regulation

Within the EU, certain methane emissions embedded in LNG placed on the Union market are now subject to the Methane Regulation. The Methane Regulation is the first of its kind internationally, with direct consequences for natural gas and LNG importers. Given that it only entered into force on 4 August 2024, none of its requirements has yet been put to test, particularly with regard to the definitions of some of its terms and the underlying processes of monitoring, reporting, and quantification of emissions. At this stage, assumptions are necessary to fill gaps in the regulation. Guidance from the Commission on the gaps in the Methane Regulation will arguably also be necessary to provide clarity to the market and ensure uniform application among Member States. This need for guidance is amplified by the fact that many significant aspects of this regulation are devolved to implementing and delegated acts that will be adopted by the European Commission in the future.

This article will now focus on those elements of the EU Methane Regulation with direct consequences on LNG imports and LNG sale and purchase agreements.

EU METHANE REGULATION AND ITS IMPACT ON LNG IMPORTERS

The Methane Regulation establishes a framework for MRV of methane emissions embedded into LNG imported into the EU, equivalence requirements, and eventually a maximum methane intensity threshold for the production of both domestically produced and imported LNG.

The Methane Regulation provides a timeline for various obligations imposed on importers of LNG. In this respect, the main obligations are specified below:

By 5 May 2025 and by 31 May every year thereafter, importers will have an obligation to provide certain information on methane emissions monitoring and mitigation measures to the Competent Authorities in Member States.[12] The data to be provided are set out in Annex IX of the Methane Regulation. Where importers fail to provide that information, in whole or in part, they must provide sound justification to the competent national authorities for such failure and set out the actions that they have undertaken to obtain that information.

As of 1 January 2027, importers must show that all relevant contracts signed or renewed on or after the entry into force of the Regulation are subject to EU equivalent MRV measures. For existing contracts (ie all contracts for the supply of natural gas/LNG signed before 4 August 2024), the importer must demonstrate that it has exercised all reasonable efforts to ensure MRV equivalence.[13]

[9] Waste Emissions Charge for Petroleum and Natural Gas Systems, 89 Fed Reg 5318–5381 (26 January 2024) <https://www.govinfo.gov/content/pkg/FR-2024-01-26/pdf/2024-00938.pdf> accessed 15 August 2024.
[10] <https://www.federalregister.gov/documents/2024/01/26/2024-00938/waste-emissions-charge-for-petroleum-and-natural-gas-systems> accessed 15 August 2024.
[11] ibid.
[12] art 27 of the Methane Regulation.
[13] art 28 of the Methane Regulation.

By 5 August 2028 and every year thereafter, for all contracts signed or renewed on or after 4 August 2024, importers are required to report on methane intensity on an annual basis. For existing contracts (ie all contracts for the supply of natural gas/LNG signed before 4 August 2024), again reasonable efforts must be shown.[14]

By 5 August 2030, importers are required to demonstrate that all natural gas imported under a supply contract concluded or renewed after 5 August 2030 has a methane intensity value below the maximum methane intensity value to be set by the Commission under delegated acts.[15]

Pursuant to Articles 27, 28, and 29 of the Methane Regulation, EU importers are obliged to submit each year a methane emissions report to the national competent authority of the Member State in which they are established. This report must be assessed by an independent third-party verifier. Member States will then collect data and information on methane emissions based on the reports and make it available to the Commission and to the public.[16]

The Methane Regulation targets upstream exploration and production operations conducted within 'licensed area'. The MRV and maximum methane intensity value-related obligations focus on methane intensity associated with crude oil, natural gas, and coal production, both within the EU and in third countries exporting to the EU.

With regard to natural gas, Article 28(1) requires importers who place natural gas (including LNG) originating from a third country on the Union market, pursuant to a supply contract concluded or renewed on or after 4 August 2024, to ensure that the producer of the product has applied MRV rules that are 'equivalent' to those applicable to EU producers. For the purpose of compliance with Article 28(1) of the Methane Regulation, for LNG delivered as of 1 January 2027, the MRV obligations applied at the level of the producer outside the EU are considered to be equivalent to those set out in the Methane Regulation if the MRV obligations are equivalent to those applied to EU domestic production under Article 12 of Regulation or if they meet the requirements of Oil & Gas Methane Partnership 2.0 (commonly known as the OGMP 2.0) level 5.

OGMP 2.0 is the oil and gas reporting and mitigation programme of the United Nations Environment Programme. It is a measurement-based, international reporting framework for the sector that covers nearly 40 per cent of the world's oil and gas production, and over 80 per cent of global LNG flows. OGMP 2.0 establishes five reporting levels, with the highest (level 5) requiring that companies reconcile their source-level emission inventories with measurements at the site level.[17] As far as the authors of this article are aware, none of the 140 companies subscribing to OGMP 2.0 have committed to level 5 at the present time.

As an alternative to a foreign LNG producer or exporter providing proof of compliance at the level of individual producers, the Regulation also provides a route for the Commission to establish country-level equivalence, which would confirm the application of equivalent MRV rules for all producers active in a given country. From the perspective of an EU importer, this is clearly the preferred option. Country-level equivalence would have benefits in terms of clarity, certainty, and ease of application, as it would relieve individual importers from the need to prove MRV equivalence for their own or their suppliers' production on a case-by-case basis. The criteria for establishing equivalence at a country level will be adopted by the Commission by one or more further implementing acts. However, there is no guarantee that third-party countries will wish to engage with the Commission to agree on bilateral, country-wide standards, and—legally—the Commission's only obligation is to 'actively engage' with third-party countries. There has been no indication from the Commission that it is close to reaching such an agreement with any of the EU's major LNG export markets (USA, Norway, etc.), so it would appear that the individual producer-level equivalence will be the default requirement for the short- or medium term.

[14] art 29(1) of the Methane Regulation.
[15] art 29(2) of the Methane Regulation.
[16] art 12(8) of the Methane Regulation.
[17] Source-level measurement covers emissions from specific sources within a facility, such as equipment leaks, venting, or flaring. Site-level measurement aggregates emissions data from all sources within a facility. See <https://ogmpartnership.com> accessed 15 August 2024.

Apart from the short lead time to provide the first emission reports, this timeline creates a number of challenges, particularly when put in the context of future specification of a methodology for calculating, at the level of the producer, the methane intensity of the production of natural gas and the future maximum methane intensity values.

The European Commission will adopt a delegated act setting out the methodology for calculating, at the level of the producer, the methane intensity of crude oil, gas, or coal production only by 5 August 2027. Prior to this date, there is no clarity on how methane intensity should be calculated. Similarly, there is no date set for the Commission to decide the maximum methane intensity values. The Methane Regulation only sets a deadline of 5 August 2029 for the Commission to issue a report assessing the potential impact of certain levels of maximum methane intensity values, before then supplementing the Regulation by setting maximum methane intensity values.[18]

Of particular concern for parties signing or renewing LNG supply contracts from 4 August 2024 onwards are questions such as:

- When is a contract considered 'renewed'? Does this include the extension of an existing contract? Does it include changes to an existing contract that are foreseen in that contract, for example price review clauses or the option for additional volumes?
- What is considered as 'all reasonable efforts' in relation to the obligation to include provisions covering the Methane Regulation in supply contracts signed prior to 4 August 2024? Is this simply a request to the other contracting party, that may or may not be denied, or something more substantial?
- What kind of emissions are to be included in the calculation of embedded emissions and what emissions need to be monitored and reported—methane leaks, venting (both intentional and due to incidents) and incomplete combustion in flaring only, as currently part of OGMP 2.0 MRV rules? Will definitions develop with the OGMP 2.0 rule book and guidance documents?
- At what step(s) in the value chain do importers need to require their counterparties to monitor and report emissions? While it appears to be clear that these obligations do not cover the full LNG value chain, and notably that they do not apply to the emissions of maritime transport of LNG, it is not entirely clear which parts of the LNG value chain *before* the loading of an LNG vessel are to be included. The Regulation ostensibly only requires quantification of the emissions generated by the 'production of […] natural gas', which, by virtue of the definition of the term 'producer' in Article 2 (58), would be limited to emissions generated in the 'licensed area' of an extraction site. With regard to offshore gas production, the licensed area will likely be defined by the relevant operators' licences granted in accordance with national laws. However, how should upstream methane intensity be calculated if LNG is produced from natural gas purchased from a hub (eg US LNG projects)?
- What kind of instrument/certificate/emission statement, based on which verification scheme (s), can be used to report a producer's methane emissions in compliance with the MRV obligations for imported LNG? Will that instrument cover the output of a producer (at the level of a legal entity), or of one of their individual production facilities for a certain period following the producer's annual report pursuant to OGMP 2.0 level 5 or equivalent? Can producers issue these emission statements themselves? Can exporters issue such documents, even if they have no control over production? Is there a risk of emission statements being revoked, or not verified, after they have been issued by a certified producer, for example, to reflect a miscalculation discovered at a regular audit? Will competent authorities in EU Member States accredit verifiers, and if so, will a verifier accredited in one Member State be accepted across the EU, in line with EU free movement rules?
- Will competent authorities require methane intensity reporting for each cargo delivered (ie cargo-level reporting), for the sum of all cargos delivered from a particular production location (ie producer-level reporting), or for all imports to the Union market reported by an

[18] art 29 (5) and (6) of the Methane Regulation.

importer (ie portfolio-based reporting)? How must an importer track a cargo-by-cargo change in feed gas supplies? If liquefaction facilities are served by multiple sources of the feed gas, is it sufficient to report based on a volume-weighted average annual feed gas supply to a specific facility, to several liquefaction facilities used by the importer, or to the LNG seller? Does the seller need to provide the buyer with an emission intensity statement upon loading and accompanying the vessel on its voyage that is transferable to a third party, to enable a title transfer of the cargo before landing?

Unless and until the Commission provides further guidance, importers, traders, and suppliers have no certainty on how to implement these requirements. As all new and renewed LNG contracts in the supply chain are now effectively subject to these new rules (as explained in the next section), there is a risk that market actors will postpone the conclusion of new long-term supply agreements with possible impacts on EU security of supply. Similar concerns are also valid for short-term LNG contracts (eg Confirmation Notice entered into under a Master Sales and Purchase Agreement).

CONTRACTUAL ELEMENTS OF THE METHANE REGULATION

These far-reaching new obligations will have direct consequences for producers, exporters, traders, and importers. Compliance with the rules will require market actors to significantly revise their standard contracts, for both future and current contracts.

The requirements of Articles 27, 28, and 29 of the Regulation must be included in new contracts or existing contracts that are in the process of being renewed, even tacitly.[19] Moreover, importers placing LNG on the Union market pursuant to supply contracts concluded before 4 August 2024 must still make 'all reasonable efforts' to require that imported natural gas or LNG meets these same requirements. These efforts may include seeking amendments to supply contracts (requiring the consent of the non-EU counterparty who may not, necessarily, be the producer). Importers must report the results of these efforts annually and in case of failure to renegotiate their existing contracts, provide sound justification for such failure, and set out the actions they have undertaken as part of those efforts.

While obtaining 'soft' or even 'hard' data provision obligations[20] from suppliers under new contracts may be possible,[21] we anticipate that importers will be faced with serious difficulty when attempting to re-negotiate existing contacts, where the importer's counterparty and their upstream supplier may have no interest to negotiate, and is not legally or contractually required to do so.

The Methane Regulation is silent on what is meant by 'renewed' contracts. Renewal potentially includes tacit renewal, which means that any extension of the underlying contract's duration may bring an existing contract into scope of a positive obligation on importers to include MRV and methane intensity provisions. In particular, and at minimum, changes to the contract that are foreseen in the contract (price review clauses, option for additional volumes) should arguably be excluded. For example, considering price review as 'renewal' could complicate the exercise of the underlying contractual rights by importers (as sellers might be reluctant to invest considerably into assets in order to meet EU emission thresholds or take the opportunity for imposing new more favourable conditions in exchange for the inclusion in the contracts of additional obligations applying to them), influencing negatively security and affordability of supply to the EU. Therefore, changes to the contracts that are foreseen in the contract or that are customary in the

[19] Methane Regulation, Recital 72.

[20] 'Soft' contractual data obligations refer to clauses that provide for an obligation but no consequences for non-compliance. A 'hard' clause would include the obligation together with consequences of non-compliance.

[21] Possible in the sense that these obligations may be the object of commercial discussion. This does not mean that the parties will necessarily agree to include these obligations and the acceptance of such clauses could be more difficult when the supplier is different from the producer, as will very often be the case in LNG supply chains.

management of mid- and long-term supply contracts (eg adjustments to the price or to the volumes to be delivered within the original duration of supply, changes to the scheduling processes, or intragroup assignment) should be excluded.

PENALTIES FOR WRONG DATA OR EMISSION INTENSITY HIGHER THAN THE MAXIMUM METHANE INTENSITY

It is noteworthy that failure to meet the requirements of the Methane Regulation will not lead to a ban on imports of LNG by the relevant producer or importer. Instead, a system of financial penalties will be put in place at the level of each Member State. Failure to comply with the reporting requirements or the future maximum methane intensity rules will therefore result in financial penalties for importers,[22] imposed by the authorities of the Member State where the importer is established.

Article 33 of the Methane Regulation requires Member States to ensure that infringements of the Regulation are sanctioned by effective, proportionate, and dissuasive penalties, which may include fines and periodic penalty payments, and Member States must take all measures necessary to ensure that these penalties are implemented. In order to have a significant deterrent effect, penalties adopted by Member States must be tailored to address (i) the type of infringement; (ii) possible advantage for the operator; and (iii) the type and gravity of the environmental damage, impact on human safety and public health. When imposing penalties, due regard must be given to the nature, gravity, and duration of the infringement in question.[23] Although Member States will have the freedom to fix the amount of fines, in accordance with their local criminal or administrative law, the Regulation sets the maximum fine per infringement at 20 per cent of the previous year's turnover of the sanctioned entity.[24] This maximum amount is significant when compared, for instance, to the maximum fine of 10 per cent of the previous year's turnover for antitrust violations under Article 23(2) of Council Regulation 1/2003 on the implementation of the rules on competition laid down in Articles 81 and 82 of the Treaty.[25]

It is unclear whether the maximum fine refers only to the turnover of the legal entity that has failed to comply with the Regulation, or to the turnover of a wider corporate group, including parent companies and whether the reference is to EU-level turnover or global turnover. In antitrust matters, the maximum penalty is calculated on the basis of the consolidated turnover of that group of companies.

Another question with respect to the level of fines is the potential application of emission offsets when considering the proportionality of a sanction for product that has failed to meet the maximum methane intensity thresholds. This could entail regulators taking into account the fact that importers or upstream operators may otherwise have offset all or some of these embedded methane emissions by procuring and retiring carbon credits generated through carbon sequestration and storage projects. It may also affect the regulator's appreciation of any environmental damage and the impact on human safety and public health, as well as the overall economic advantage procured by the offending operator. However, an ability to rely on offsets to mitigate fines is uncertain, as it is simply not addressed in the Methane Regulation, and it is not yet clear whether Member States might be prepared to take account of offsetting in this way. The Commission should provide guidance to Member States to ensure a level playing field for importers across the Union.[26]

[22] art 30 of the Methane Regulation.

[23] Methane Regulation, preamble 62.

[24] art 33 of the Methane Regulation provides that 'In the case of legal persons, the amount of the administrative fines […] shall not exceed 20% of the annual turnover in the preceding business year.' This wording leaves open whether the reference is to the importer or its group companies or something else. The difference is likely to be significant.

[25] Council Regulation (EC) No 1/2003 of 16 December 2002 on the implementation of the rules on competition laid down in arts 81 and 82 of the Treaty (OJ L 1, 04/01/2003, p 1–25).

[26] The EU's 2024 Carbon Removals and Carbon Farming Certification (CRCF) Regulation as well as the EU's Industrial carbon management strategy provides a potential framework for carbon offsetting.

CONTRACTUAL PROVISIONS RELATING TO DATA ON METHANE EMISSIONS

Soft MRV clauses

By soft clauses, we mean clauses that provide for an obligation but have no consequences for non-compliance. The inclusion of 'soft' MRV provisions in new contracts may seem to be uncomplicated, as these obligations may reasonably be the subject of negotiations between the parties, if the parties have a clear picture of what is required under the Methane Regulation and the relevant exporter is willing and able to accept such provisions. However, this may be significantly more difficult in the context of existing contracts. It would require that both parties (and potentially project lenders) accept a change in a long-term LNG SPA that has specifically been designed to lock-in the details of the transaction over a long period.

A simple example of a soft clause addressing the MRV requirements of the Regulation could be:

> *Seller shall use reasonable efforts to provide Buyer with information related to the LNG sold pursuant to this Agreement, that is requested by Buyer in relation to Buyer's reporting obligations pursuant to laws applicable to importers of LNG into the European Union.*

An example of a soft clause addressing methane emissions (as well as carbon dioxide emissions) is also provided in a publicly disclosed contract from 2021 between Driftwood and Shell, available via SEC reporting.[27] Although this clause focuses though on the seller's obligations, it nevertheless provides an example of an emissions data-related clause.

> *Not later than the last Day of each Month, starting on the second Month after the Month in which the First* [Date of First Commercial Delivery] *occurs, Seller shall provide a written report to Buyer, in form and substance determined by Seller acting in good faith, that sets forth information regarding certain carbon dioxide and methane emissions associated with each cargo delivered hereunder in the prior Month. Seller will also make available to Buyer through secure online access, the non-proprietary background data and assumptions used in preparing each report. Seller shall use reasonable efforts to ensure the form of the report complies with any prudent industry practices related to carbon dioxide and methane reporting that are followed by the operators of similar LNG liquefaction terminals in the U.S. Gulf Coast. Seller shall cause such report to comply with any Applicable Laws applicable to Seller and its sale of LNG hereunder.*

Coming back to what was discussed earlier in this article, the clause above would only cover an ex-post and import portfolio-based reporting obligation of methane emissions data to competent authorities, not necessarily a cargo-by-cargo one.

Another pertinent question in respect of emissions and emissions data in LNG supply arrangements is whether to address the emission intensity as a product specification or whether it should be treated as a new issue, in a separate provision. In the above contract from Shell and Driftwood, the second option was chosen. The emissions data-related clause is not included in the off-specification LNG provision. This is the more logical approach, in our view, given that the emission intensity is not a gas quality issue. Product specification rules deal with issues such as quality of natural gas, compatibility with import terminals, and potential damage to import or end-use assets caused by off-specification gas. Considering methane emissions of a cargo or deliveries under a contract exceeding the destination market's maximum methane intensity value as incompatible with that market is not ideal. But when it comes to the formulation of eventual contractual consequences—that is in case of a hard MRV clause—parties would have to consider substantially different circumstances that are better dealt with separately.

[27] <https://www.sec.gov/Archives/edgar/data/61398/000110465921097575/tm2123600d1_ex10-1.htm> accessed 15 August 2024.

Hard MRV clauses

Much more difficult than a 'soft' contractual provision would be the inclusion of 'hard' contractual provisions relating to MRV obligations or the maximum methane intensity of the LNG. Such 'hard' provisions would include both the underlying obligations and some consequences for missing or inaccurate data or a cargo or annual delivery which does not respect the maximum methane intensity values. Fines under the Methane Regulation imposed by EU Member States will almost certainly target the importer, but the importer is likely to seek a contractual right of remedy against the seller/exporter, seeking to indemnify the importer against the payment of any sanctions. Alternatively, there could be a contractual right for the buyer to refuse a cargo that is not accompanied by the required data or does not meet the maximum emission intensity value.

It is noteworthy that any remedy under the contract does not necessarily have to be based on the risk of fines for the importer, especially in the case of annualized importer-based calculations of emission intensity, as opposed to a cargo-specific emission intensity limit. If there is an annualized, portfolio-based methane intensity calculation, parties may be able to mitigate the risk of sanctions for the importer by sourcing feed gas from a lower emission source or an alternative location, thereby optimizing the emission intensity of the portfolio on an annual basis. However, importers may incur higher costs, as they would need to ensure flexible offtakes from a range of producers with different emission intensity profiles.

The inclusion of 'hard' clauses is also likely to be difficult because there is still uncertainty about the Commission's proposed MRV methodology and robustness of the data coming from the upstream segments of the natural gas value chain. In addition, the seller might be obliged to comply with MRV requirements in its own jurisdiction, or the seller may already be adopting its own MRV requirements. If these differ from EU requirements, the parties face the task of ensuring compliance with multiple sets of regulations.

It may be challenging for an LNG supplier to agree to a 'hard' MRV or methane intensity provision, if the supplier has other options to supply alternative buyers from countries that have not imposed similar requirements. This, of course, ultimately results in a plausible threat to the security of the energy supply for the EU. From the sellers' perspective, unless there is a reward or price premium, concluding supply agreements into the EU would simply entail more risk, without any additional revenue.

However, it should be recognized that the extent of the problem connected to 'hard' clauses depends on various issues, such as the source of the feed gas for LNG, the structure of the LNG project, and the type of LNG contract. These will be discussed next.

LNG EXPORT PROJECT DETAILS AND THEIR IMPACT ON THE MRV OF METHANE EMISSIONS

Structure and variables in relation to the underlying LNG export project(s) will have a significant impact on MRV and intensity of methane emissions. Depending on the configuration of the production and export projects, compliance with the Methane Regulation will be more or less complicated at the level of the producer or the exporter.

First, the certainty and availability of MRV and emissions data depends, in large part, on the origin of the feed gas for the LNG. It will be particularly difficult to obtain viable data from US LNG producers, where they source the feed gas from a hub, rather than a single field.[28] In the USA, the number of production locations, extensive and enmeshed pipeline networks, processing plants, and transmission and storage assets makes it impossible to identify the origin of gas molecules and to physically track the feed gas. In this scenario, a book-and-claim or mass-balancing system might be possible, but this has not yet been addressed by OGMP, which is predominantly a quantification and reporting—not an accounting—scheme. If the regulatory goal of the EU is to

[28] This is of course not only limited to USA (feed gas can be sourced from different fields connected via pipeline to the liquefaction plant also in other countries) and the same concerns apply to trading (eg spot market) where transactions are concluded at the hub.

establish a compliance system that can deliver reliable data, then it would appear that further consideration of its operational implementation is necessary.

Secondly, it should be noted that LNG export projects (in the USA, in particular) are structured in a variety of ways: certain projects operate according to a tolling concept, where the owner/operator of the liquefaction plant only provides liquefaction services. Here, the customer of the tolling service will procure the natural gas separately. The customer could be a US upstream company looking to sell LNG shipments abroad, or it may be a foreign player sourcing the gas from the US market and then exporting it. Under this model, the LNG liquefaction is a service, and the terminal operator does not own or procure the gas used as feedstock for LNG. Under a tolling arrangement, the liquefaction company can only reasonably report its own emissions; the buyer would have to aggregate upstream production emissions in their emission statement accompanying the cargo. Rules governing how to do this aggregation would also have to be standardized.

The other operational model is for the liquefaction project to procure the natural gas and provide the tolling service. Under this arrangement, the customer buys the LNG after it has been liquefied and pays the owner/operator of the LNG facility both for the natural gas used as feedstock for the LNG and for the liquefaction service. Under this model, the LNG supplier would need to report all upstream methane emissions. This, compared to the tolling model, is more complicated for the LNG supplier.

For most other LNG-producing nations, compliance with the Methane Regulation should be a simpler exercise, given gas is generally extracted from identifiable gas fields, transportation to liquefaction plants is less complex, and the seller operates both the production and the liquefaction facilities.

Contractually, the parties need to specify the form of the methane intensity statements that are to be delivered alongside the product. If the producer/supplier complies with their obligation to deliver these agreed statements, and if these statements are verified by an organization accredited by the relevant competent authorities of the EU Member State where the importer is established, there is no auditing required at the import point and the numbers are deemed to be correct for the relevant import. In the event that the emissions are higher than agreed at loading of the cargo, the contract would need to specify the remedy (such as a right of refusal, if applicable).

Alternatively, the contract may allocate the sourcing of certified gas in a traded market (iethe USA) to be the responsibility of the off-taker. This is possible in tolling arrangements, but not in bundled services, unless the off-taker can book and claim certificates (eg a mechanism equivalent to EU Guarantees of Origin under the Renewable Energy Directive[29]) which could be sourced independently from the actual consignment of feed gas that was liquefied and loaded on the respective cargo.

In terms of assessing options and responsibility, parties will need to take account of the following elements:

- if the feed gas for liquefaction is sourced from identifiable gas fields, the emissions are easier to quantify[30];
- if the feed gas for liquefaction is sourced from a gas hub (like the Henry Hub), the emission intensity of a cargo depends on the (mix of) producers contributing to the feed gas; each producer's methane emission statement would have to be passed along the chain of custody from one trading counterparty to the other, if a mass-balancing approach is chosen by the verifier. As this seems to be difficult to achieve in liquid traded markets, options such as a book-and-claim approach could be considered; if not, LNG exporters or buyers would have to source feed gas via long-term gas purchase agreements directly from producers instead of through the traded market; in this case, the risk of price differentials to hubs needs to be addressed in the pricing mechanism of LNG SPAs;

[29] Latest revision, Directive (EU) 2023/2413 of the European Parliament and of the Council of 18 October 2023 amending Directive (EU) 2018/2001, Regulation (EU) 2018/1999, and Directive 98/70/EC as regards the promotion of energy from renewable sources, and repealing Council Directive (EU) 2015/652 (*OJ* L, 2023/2413, 31 October 2023).

[30] This means that establishing MRV equivalence and the other reporting obligations provided in the Regulation are easier to meet.

- If LNG is produced under a tolling model, the toller/seller has the obligation to source the feed gas and bears methane emission intensity-related (price) risks;
- If LNG is produced as a bundled service, the first seller in the LNG supply chain has the obligation to source the feed gas and bears the methane intensity-related (price) risks.

Irrespective of the sourcing of feed gas it is paramount that emission statements, once issued by a producer and certified as compliant with OGMP 2.0 level 5 or equivalent, are immutable or non-revocable as soon as they have been passed on to a third party. If not, LNG buyers and importers to the EU, despite having carefully emission-optimized their portfolios, would have to face the risk of exceeding methane intensity thresholds based on an ex-post audit of third-party emission statements containing incorrect information.[31]

RELEVANCE OF DELIVERY MODEL: FOB OR DAP/DES

Depending on whether the LNG is sold under deliver at place (DAP)[32] or free on board (FOB) terms, an option to divert LNG that does not meet the EU's maximum methane intensity threshold may help the buyer, in the event that the contract obliges it to take the delivery regardless of the methane intensity (and no other contractual remedies are available).

LNG can be sold under DAP or FOB contracts. Under a FOB contract, the seller completes delivery when the goods are loaded onto the ship at the named port of shipment. The title and risk relating to the cargo is transferred to the buyer at that moment, and the buyer has to bear all costs and risks of loss or damage to the goods from that point. Under a DAP contract, the seller completes delivery of the contract goods when goods are placed at the disposal of the buyer at the named port of destination. In LNG trading, that would be when the LNG is delivered at the unloading terminal.

LNG from the USA is typically sold under the FOB model, whereas LNG from Algeria, Qatar, Russia, and other countries is often sold under DAP. In 2023, deliveries to the EU market consisted of over 500 reported transactions out of which 89 per cent were shipped under DAP contracts and 11 per cent were shipped under FOB contracts.[33]

It is important to note that it is relatively common for LNG to be sold and purchased multiple times before it ultimately reaches the unloading/regasification terminal. For example, a US LNG producer may sell an LNG cargo on FOB terms to an LNG trader, who then sells the same LNG cargo on DAP terms to an EU importer at a regasification terminal in the EU. In this example, the direct counterparty of the EU importer is not the producer, nor even the initial exporter, of the LNG. Therefore, if the EU importer seeks amendments to the supply contract it has with the LNG trader (eg, to require the LNG trader to provide the information required to comply with the Methane Regulation), the LNG trader could only agree to such an amendment if it, in turn, secures an equivalent amendment in their LNG supply contract with the US LNG exporter or producer. The longer the supply chain, the more uncertain it is that EU importers will be able to require compliance from their counterparties.

To simplify, for LNG sold to the EU market under a DAP contract, the supplier has an obligation to deliver the LNG to the EU, unless the parties agree otherwise. For LNG sold under a FOB contract, the title and risk transfer at the loading of the LNG onto the ship and, after this moment, it is up to the buyer to decide what to do with the LNG and *where* to ship it. In both cases, the importer must supply the emission intensity information, but contractually these two scenarios are different. In FOB sales, the seller has concluded its contractual obligations when LNG is loaded onto the ship; in DAP sales, the seller has concluded its contractual obligations at offloading at

[31] The question remains how to reflect when emission statements have been found to provide incorrect information in $year_n$, eg, when a producer has not included in their calculation a methane leak overlooked at source level but detected at site level; one option would be for emission statements in y_{n+1} to provide elevated emission levels.

[32] While incoterms have changed from deliver ex ship (DES) to using DAP, the LNG market participants still largely use DES. This article uses the new DAP acronym.

[33] ACER, Analysis of the European LNG market developments 2024 Market Monitoring Report, 19 April 2024, para 70 <https://www.acer.europa.eu/sites/default/files/documents/Publications/ACER_2024_MMR_European_LNG_market_developments.pdf> accessed 15 August 2024.

the re-gasification terminal. This means that in the event that the emission intensity of the LNG is higher than the permitted maximum methane intensity value for the EU, the buyer can divert the cargo to other non-EU markets, without negotiating this with the seller.[34]

In other words, a right of refusal due to excessive methane intensity of a cargo will be less crucial in FOB contracts, and it will be less crucial for global portfolio players than it is for buyers sourcing gas for EU demand only.

ADDITIONAL OPINIONS ON CERTAIN OPEN QUESTIONS IN RELATION TO METHANE REGULATION

Given the many ambiguities and open issues left in the final version of the Methane Regulation, this section will provide views on interpretations of some of these problem areas that are considered to be 'workable' when implementing the requirements of the Methane Regulation in current or future LNG SPAs.

Importer

While the definition of an 'exporter'[35] is clear under the Methane Regulation, one of the ambiguities in the Regulation is the notion of an 'importer' of LNG. Under Article 2(59) of the Regulation an '*"importer" means a natural or legal person who, in the course of a commercial activity, places […] natural gas […] originating from a third country on the Union market, including any natural or legal person established in the Union appointed to carry out acts and formalities required under Chapter 5*'.

To provide clarity, this definition requires further detail. For example, should the 'importer' of LNG be the natural or legal person having terminal usage rights at the LNG regasification facility (the terminal user), that is, upon discharge of the LNG at the LNG regasification facility? This interpretation would align with the approach adopted under the REMIT Regulation.[36] Alternatively, should the 'importer' be the natural or legal person who delivers natural gas onto the Union market from storage at the LNG regasification facility? Similarly, an importer is required to provide information to 'the competent authorities of the Member State in which they are established'. What happens if an 'importer' is not established in a Member State? Is the reference in the definition of 'importer' to a third-party appointee intended to amount to an obligation on all non-EU established entities to appoint a local agent, for the purposes of compliance with the Regulation (as is the case under EU CBAM, for example)? Clarification is required to provide certainty for both importers and exporters.

Producer

Under Article 2(58) of the Methane Regulation, '*producer' means an undertaking which, in the course of a commercial activity, produces […] natural gas […], by extracting it from the ground in a licensed area, processing it or conveying it through connected infrastructure within that licensed area*'. Depending on the configuration of an LNG liquefaction project, the result can either be that: (i) the upstream producer—that is the undertaking extracting the natural gas from the ground and processing it, but *not* the undertaking transporting it to the liquefaction facility and not the undertaking liquefying it (ie not the undertaking 'producing' the LNG as such)—is regarded as the 'producer' and (ii) the 'producer' may be interpreted as also referring to the LNG producer, that is if all activities—extraction, processing, transportation, liquefaction—are carried out by the same undertaking within a single 'licensed area'. Additional uncertainty is created by the term 'licensed area', which is not defined in the regulation and which presumably will differ from project to

[34] This diversion may of course be complicated if the natural gas has already been sold in downstream natural gas markets. Similarly, diversion also requires new logistical arrangements including available capacity in other regasification terminals.

[35] Under art 2 (60) of the Methane Regulation, '"exporter" means the contractual counterparty to the importer in each contract concluded for the supply of crude oil, natural gas or coal into the Union'.

[36] Regulation (EU) No 1227/2011 of the European Parliament and of the Council of 25 October 2011 on wholesale energy market integrity and transparency (*OJ* L 326 8 December 2011, p 1)

project and jurisdiction to jurisdiction. This might incentivize projects to deliberately set boundaries in a way to artificially ensure that fewer activities in the LNG value chain are included in the methane intensity calculation.

The approach to the methane intensity value calculation should also be to ensure equivalence between natural gas produced in the EU and natural gas produced in a third country and transported to an EU import point, providing a level playing field for different project structures within the LNG value chain, that is integrated versus distributed feed gas supply.

Verification

Verification of methane emission intensity is a key part of the Methane Regulation and clarity of approach is crucial. The Methane Regulation does not explicitly delegate power to the European Commission to establish a Union-wide verification framework. However, it could be included in the competence to adopt a delegated act setting out the methodology for calculating the methane intensity at the level of the producer.[37]

This article assumes that methane emission reports or statements will be self-issued by producers, but regularly audited by a third-party verifier (or certification bodies mandated by the verifier), as is the case for greenhouse gas emissions and sustainability requirements under the EU Renewable Energy Directive. The audit would certify the cargo-by-cargo methane emission statements issued by the producer as complying with monitoring and reporting requirements set by either OGMP 2.0 level 5 or by a standard based on OGMP 2.0 level 5 and developed by a nationally or EU accredited standardization scheme[38]; it is further assumed that an initial certification audit of a producer will be provided by the same verifier, before the producer's participation in such a standardization scheme, with the purpose of the producer being allowed to self-issue methane emission reports under that scheme.

After the producer 'self-certifies', there are then three possible scenarios:

1) Subsequent audits of the producer's methane intensity calculation will be forward looking: the producer should be audited on a regular, for example, annual, basis, and once compliance with the standard has been certified for the relevant year ahead, revocation of certification for that year should be ruled out, and re-assessment of methane intensity reports by that producer should not be possible for that year. If the annual audit in $year_{n+1}$ provides the result that emission limits have been misstated over the course of the preceding $year_n$, the consequences should be considered for a period only after the audit, for example, the following $year_{n+2}$, and emission intensity of outputs of a certain facility or site should be adapted only in future reports.
2) Subsequent audits will take place between the end of the relevant reporting period and the deadline for submission of emission intensity reports by the buyer/importer to the competent authorities by 31 May every year after 5 May 2025 according to Article 27 of the Methane Regulation: the producer should be audited on a regular, for example annual, basis, and once compliance with the standard has been certified for the relevant preceding year, revocation of certification for that year should be ruled out and re-assessment of methane intensity reports by that producer should not be possible for that year. If the annual audit demonstrates that emission limits have been misstated over the course of the preceding year, the emission intensity of outputs from a certain facility or site should be revised in time for the submission deadline for the emission intensity report by the importer.
3) Subsequent audits will be backward looking, as in the option above; however, once an emission statement has been transferred to a cargo and that cargo has been imported to the EU market, the emission statement can be used to calculate the emission intensity of the

[37] art 29 (4).

[38] Such self-issued statements are, eg, in the framework of the EU Renewable Energy Directive, often referred to as certificates, although the certification as such is provided by a certification body (eg TÜV, DNV, etc) only on an annual basis in the form of an ex-post audit that confirms compliance of the self-issued certificates with the standards set by an accredited verification scheme.

relevant cargo under the Methane Regulation; the importer has acted in good faith on the emission statement of a certified producer and the result of a negative audit report of that producer will have consequences for the producer only, for example, a temporary suspension or a withdrawal of their certification as OGMP 2.0 level 5 compliance.

Both scenarios 1 and 3 allow importers to manage their methane intensity-related risks actively, while scenario 2 would reduce their options in seeking a remedy from counterparties that have misstated their emissions, subject to relevant contractual provisions being put in place.

Accreditation of verifiers used by importers is a national competence under Article 9 of the Methane Regulation. Once a certification by a nationally appointed verifier has been completed, this should be recognized in all Member States and the emission statements should be accepted by competent authorities throughout the Union: LNG can be imported into any Member State.

Finally, while the European Commission must under Article 28(3) issue recommendations containing optional model clauses related to the information to be provided for the purposes of MRV equivalence obligations, which importers placing LNG on the Union market can use, the Commission implementing act for third-country equivalence does not have a specific date, the model clauses are likely to assume producer/exporter-specific equivalence certification.

Methane intensity calculation

We assume that methane emission intensity will be reported separately for each LNG cargo, based on emission statements prepared by each producer (noting the ambiguities above about at what level this requires assessment). This intensity assessment will be based on the energy content of the LNG cargo and expressed in $gCO_2eq/MMBTU$.

Regarding emissions resulting from natural gas production with feed gas supply from multiple production sites connected via an interconnected, enmeshed pipeline and storage system, methane intensity will need to be calculated using either a mass-balance or book-and-claim approach.

However, the Regulation appears to contemplate that importer compliance with methane emission intensity thresholds will be assessed on the basis of annual aggregate emission intensity values, expressed as CO_2eq/MWh of total natural gas imports per obligated party. This includes imports by pipeline, maritime transport, and other transport modes.

Scope

Greenhouse gas emissions other than methane are out of scope of the Regulation. This is confirmed by the explicit wording of the Methane Regulation, which refers to methane emissions only; it is also in line with OGMP 2.0 guidance that states that the framework includes only 'methane emissions from process venting, due to unintentional leaks (ie fugitive emissions) and emissions due to incomplete combustion (eg in heating, power generation, flaring).'[39] In addition, only direct emissions of methane (Scope 1 emissions as defined by the GHG Protocol Corporate Standard) should be included, whereas indirect emissions from the generation of purchased energy (Scope 2 emissions), and indirect emissions not included in Scope 2 (Scope 3, including emissions generated by the combustion of the fuel by end-users) that occur in the value chain of the reporting company, are not within the scope of the framework. This is consistent with the scope of OGMP 2.0.

Force majeure

Force majeure events associated with unavoidable methane emissions should, in our view, be excluded from the emission calculation. This would be in line with the intention of the Methane Regulation which is to improve facilities and operators' *intentional* behaviour. This is also in line with OGMP 2.0 rules, which include emissions generated by 'incidents', including accidents and

[39] See OGMP <https://ogmpartnership.com/wp-content/uploads/2023/02/OGMP_20_Reporting_Framework-1.pdf> accessed 26 June 2024. The Delegated Act setting the methodology for calculating methane intensity of natural gas imports for the purposes of the Methane Regulation should consider that preserving dynamic references to OGMP rule-setting will also include implicit dynamic references to Greenhouse Gas Protocol rules setting. This would lead to increased regulatory risk for obligated parties as it is unclear how both institutions will organize their rules-setting process in future.

malfunctions; however, accounts should only be taken of emissions that could have been reasonably avoided.

CONCLUSION: SIGNIFICANCE OF THE METHANE REGULATION ON EU GAS IMPORTS THOUGH LNG

This article has discussed certain elements of the Methane Regulation which will create difficulties under current or future LNG supply agreements. The issues identified are of significance, as the EU is still predicted to import significant amounts of LNG in the years to come.

Natural gas demand (including LNG demand) within the EU market is projected to decline. As both the ACER 2024 Report and the International Gas Union 2023 LNG Report[40] highlight, energy transition targets and emission reduction plans in the EU, based on the projections in the European Commission's REPowerEU communication, as well as in its earlier 'Fit for 55' legislative package and its European Green Deal communication may lower European Union gas consumption by 30 per cent by 2030. The current policies in the EU are aimed at reducing this share even further, on the road to 2050 net-zero date: latest projections in the European Commission's communication of the 2040-climate-target expect a reduction of gas demand from currently 400 bcm to only 100 bcm in 2050.[41] However, it must be emphasized that projections and forecasts vary significantly; and the European Commission's projections are essentially meant to provide a possible way to achieve net-zero emissions in 2050 (and the policies required to do so) rather than forecast what will most likely happen.

Be that as it may, there will be a need for imports of LNG from international markets in particular, over the next decades. The uncertainty created by the Methane Regulation will make contract negotiations more difficult and will negatively affect the security of gas supply within the EU. It is therefore critical that further clarity on the details of the Methane Regulation is provided and the missing pieces of the regulatory framework are provided without delay.

Even with these corrections, it is likely that the market reaction to the Methane Regulation is to create two distinct markets: low-methane LNG and 'regular LNG'. The distinction will impact the price of the commodity and it appears logical that the low-methane LNG will have a price premium. This means that the EU customers will pay a higher price for LNG supplies going forward.

[40] <https://igu.org/resources/lng2023-world-lng-report/> accessed 15 August 2024.

[41] Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee, and the Committee of the Regions: Securing our future Europe's 2040 climate target and path to climate neutrality by 2050 building a sustainable, just and prosperous society. 6 February 2024. <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=COM%3A2024%3A63%3AFIN> accessed 4 September 2024.

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