

Position paper on Methane Emissions in the Energy Sector

By mid- and downstream gas operators of Europe



This communication stresses critical issues that may impact the applicability and efficiency of the [Methane Emissions in the Energy Sector Regulation](#).

ENTSO-G, Eurogas, GERG, GIE, and MARCOGAZ represent the operators of the **European gas mid/downstream infrastructure**. Our operators are committed to pursuing and intensifying their contribution to reducing methane emissions. We understand the need for such a Regulation and fully support the deployment of an appropriate action plan. In this context, we support the definition of a regulation based on the following guiding principles.

Speed up reporting by aligning with OGMP 2.0

The faster robust data gets to the public, the better for everyone. We need data-driven discussions and decisions, without creating multiple and possibly inconsistent reporting, accounting and verification obligations¹.

Recognize the “One size does not fit all” principle

The scope of the regulation covers a broad part of the gas value chain, from upstream via midstream to downstream, meaning highly heterogeneous assets. A unique prescriptive requirement (e.g.: LDAR periodicity) may be very suitable for one type of asset, and not for all the other types. This has to be reflected in the regulation.

Recognize practical constraints

A leak will be repaired only after a permit for commencing excavation works in the middle of a busy area has been received. Obligations and timelines to implement mitigation measures must take into account the time required to execute such projects in existing complex facilities in operation.

Require implementing the most effective measures first

The order of implementation matters. The proven and effective measures for reducing venting, for example, should be implemented first.

Require actions that lead to the least overall greenhouse gas emissions

A mandate to minimize GHG emissions must be clear for repairs of leaks and reduction of vents and avoid that mitigation solutions generate more climate impacts than the original methane emissions (in terms of the life cycle of the necessary parts, for example). European competent authorities should define relevant rules to ensure that minor emission reductions will not lead to highly disproportionate costs to society (e.g. ACER to indicate a limit to methane emissions abatement cost).

Standardise methodologies and procedures through CEN

Set the key requirements and limits in the Regulation, leave the technical details for CEN standards, and verify the outcome in audits

¹ Note: OGMP2.0 is an international initiative led by the UN Environment Programme (UNEP) with support from the European Commission and several state governments. It gathers, on voluntary basis, over 80 Oil and Gas companies and the main NGOs involved in the methane emission matter. OGMP2.0 sets a reporting framework architecture and quantification guidance's agreed upon between the members as well as a comprehensive pathway for them to reach in 3 years the most advanced level in MRV (Monitoring, Reporting, Verification).

Based on our technical background and expertise, we would like to draw your attention to some crucial points that you will find below, and that are part of the complete set of amendments proposed by our associations ([full document](#)). Those should be carefully taken into consideration to enable the regulation to be successful.

Concerning MRV (Monitoring Reporting and Verification) Chap 3 article 12:

Quantification and not only measurement.

Emissions measurements are not always accurate and sometimes not even possible. Therefore, other quantification methods, as documented in OGMP2.0 and CEN, should be considered.

[See definition article 2.7a amended proposed text and related justifications here below](#)

Site-level measurements:

Site-level measurement techniques are not mature enough to confirm well-known source-level quantification methodologies, they may not even be compatible with distributed infrastructures (i.e. networks). This is why we propose the use of "alternative methods", to confirm source-level quantification. They would be defined through a dedicated CEN standard as the "reconciliation" process is clearly an emerging one. *[See Article 12, paragraphs 3 and 8 amended proposed text and related justifications here below](#)*

Concerning LDAR (Leak Detection And Repair) – Chap 3 article 14:

Survey frequencies:

The universal 3 months survey interval in the European Commission's proposal, transposed to all gas assets in mid and downstream segments, is not an effective way for leak detection: in some cases, limiting the intervals to that minimum will lead to an inefficient operation as the surveys will detect no leaks on well-performing assets. Our proposal strives to keep the Commission's prescriptive approach while reflecting the operators' detailed knowledge of assets and available data. To maximize LDAR efficiency on relevant sources, the leak detection frequencies should be adapted to the type of asset or material and to the leak risk profile.

The proposed frequencies are set as minimum requirements (the less constraining). However, survey may be carried out more frequently for specific situations, when required by a CEN standard that will formalize and unify the frequencies and detection methods (see the report from the Madrid Forum):

[See Article 14.3 amended proposed text and related justifications here below](#)

Repairs:

The gas industry is already committed to addressing all detected leaks with no unnecessary delay: there is no reason for leaving leaks not addressed if the repair is simple. However, the operator's ability to repair is often limited by real-world constraints. Prescribing universal limits is not suitable because each leak is specific and faces specific constraints that cannot be controlled by the operator. Instead, we propose a general mandate to repair leaks with no unnecessary delay under the control of the competent authorities and with minimum overall environmental impact.

[See Article 14.5 amended proposed text and related justifications here below](#)

Abatement costs considerations:

The vast majority of the emission are mitigated with reasonable abatement cost. However there are situations where the avoided greenhouse gas emissions are low while the cost of repair is disproportionately high and are passed on to the end users. We call the competent European authorities (e.g., ACER, JRC) to set a limit on abatement costs.

[See Article 14.5 amended proposed text and related justifications here below](#)

Concerning Venting and Flaring – Chap 3, Article 15:

For our existing assets, it will take time to implement the necessary mitigation measures to comply with 15.4 and 15.5. That implementation will require large investments that must be properly prioritized in order to go first for what is the more efficient.

There are situations in which the avoided greenhouse gas emissions are low while the cost is disproportionately high. To guarantee a cost-effective operation, we find it necessary to avoid implementing such provisions immediately after the Regulation enters into force. We call the competent European authorities to set a limit on abatement efficiency. That prioritization associated with corresponding time delays is also necessary because of practical constraints (engineering, parts lead times, the impact of the works on day-to-day operation...)

See articles 15.6 and 15.7 amended proposed text and related justifications here below

Conclusions:

Without addressing these aspects, the regulation could:

- be inapplicable to some extent,
- lead to very high costs for the society with low additional benefit to the environment (i.e.: inefficient and poorly prioritized investments)

We believe that our proposals will make the regulation relevant in terms of mitigation measures, prioritisation, abatement efficiency and, in the end, lead to the needed environmental benefit.

Concerned amendments

MRV: Article 2

<i>Regulation text proposed by the commission</i>	<i>Proposed amendments</i>
<i>New proposed definition</i>	(7a) 'quantification' means operations to determine the quantity of methane emissions, based on direct measurements, engineering calculations/simulations, models using operational parameters, ambient measurements and meteorological data, or estimation through generic or specific emission factors.
Justification The quantification definition is proposed. Alternatives to measurements are needed and used, as they are more suitable and/or more accurate. See also the OGMP 2.0 technical guidance documents. The definition is adapted to the use of quantification in chapter 12 wording.	

MRV - Article 12

<p>3. By ... [36 months from the date of entry into force of this Regulation] and by 30 March every year thereafter, operators shall submit a report to the competent authorities containing direct measurements of source-level methane emissions for operated assets referred to in paragraph 2, complemented by measurements of site-level methane emissions, thereby allowing assessment and verification of the source-level estimates aggregated by site.</p> <p>Before submission to the competent authorities, operators shall ensure that the reports set out in this paragraph are assessed by a verifier and include a verification statement issued in accordance with Articles 8 and 9.</p>	<p>3. By ... [36 months from the date of entry into force of this Regulation] and by 30 March 31 May every year thereafter, operators shall submit a report to the competent authorities containing direct measurements quantification of source-level methane emissions for non-de-minimis sources for operated assets referred to in paragraph 2, complemented confirmed by measurements a representative sample of an alternative/different quantification method described by CEN standards for operated facilities with methane emissions exceeding [100 tonnes per year] according to the reporting of the previous year. of site-level methane emissions, thereby allowing assessment and verification of the source-level estimates aggregated by site. As long as no CEN standards provide adequate methodologies allowing such emission assessment methods, they can be performed on a voluntary basis. The assessment scope and frequency shall be based on experience using a risk-based approach or similar and shall be approved by the competent authority.</p> <p>Before submission to the competent authorities, operators shall ensure that the reports set out in this paragraph are assessed by a verifier and include a verification statement issued in accordance with Articles 8 and 9.</p>
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Justification

Extending the deadline to 31st May is necessary for many companies as it is challenging to gather and verify all the data. The deadline would have to be in line with the OGMP deadline reporting date (31st May).

This paragraph should not be limited to direct measurement but should also allow other quantification methods. See also the justification in article 2 of the definition to 7a.

Site-level quantification has a relative low technology readiness level (compared to source-level). There are currently no mature and proven top-down technologies available for accurate quantification of methane emissions on a "site-level" in midstream and downstream. Hence, a comparison between "source-level" and "site-level" measurements is not reliable yet. For example, for DSO grids, mainly composed of kilometres of continuous underground pipes in urban areas and a wide range of small size components, site-level techniques are only emerging and need to be further tested and improved.

For this reason, we strive for a technology open approach, allowing different types of emissions assessment to confirm the source level emission quantification, not necessarily on the per-site scale. The well-accepted good practice to proof that one method is working is to confirm it by another one. We propose to adopt a general approach in which any relevant alternative/different quantification method can be used to confirm the source-level quantification. Due to the low maturity of the confirmation techniques and methodologies we propose to make them mandatory only when the corresponding CEN standard is available.

We are concerned about the benefit of using site-level or alternative measurement for all sites. There is no significant added value in applying a confirmation measurement to small sites with low number of potentially leaking components. We propose to limit the alternative/different measurement for sites where source-level quantification exceeds 100 tonnes per year.

The approach presented here is in line with the 'learning by doing' concept in OGMP 2.0.

LDAR - Article 14

2. By ... [6 months from the date of entry into force of this Regulation], operators shall carry out a survey of all relevant components under their responsibility in accordance with the leak detection and repair programme referred in paragraph 1.

Paragraph 3 in our amendment proposal document:
By ... [~~6~~12 months from the date of entry into force of this Regulation], operators shall ~~carry out~~ **initiate** a survey of all relevant components under their responsibility in accordance with the leak detection and repair programme referred in paragraph 1.

Thereafter, leak detection and repair surveys shall be repeated ~~every three months~~ **according to the Tables 1 and 2.**

The LDAR campaigns in mid-stream sector, will be carried out according to the frequencies in Table 1.

Table 1

INSPECTION INTERVAL	MINIMUM LEAK SIZE SEARCHED FOR	TYPE OF ASSET
[6 MONTHS]	[400 g/h]*	Compressor station Underground storage LNG-Terminal
[12 MONTHS]	[20 g/h]* ,**	Compressor station Underground storage LNG-Terminal Regulating and metering station
[24 MONTHS]	[20 g/h]*	Valve stations

*Minimum leak sizes detectable with the selected device (e.g. full check via OGI camera for 400 g/h)

**will be done in lieu of the 6 months frequency survey where appropriate.

For Distribution System Operators, the leak detection and repair programme is established on a performance based approach depending on the leakage sensitivity of the material the pipelines are made of. Therefore, the surveys shall be repeated according to Table 2:

Table 2.

INSPECTION INTERVAL	TYPE OF MATERIAL (MAINS)
[6 MONTHS]	Grey cast iron
[12 MONTHS]	Asbestos
[24 MONTHS]	Ductile cast iron
[36 MONTHS]	Non-protected steel
[60 MONTHS]	polyethylene, PVC, protected steel (<= 16 bar)

The inspection intervals in Table 1 and Table 2 are the minimum requirements for LDAR campaigns. [*The inspection intervals can only be shortened*]. Methodologies for setting inspection intervals will be further specified and adapted in the CEN standard.

In lieu of, or in combination with leak detection and repair surveys, operators may use continuous monitoring systems, provided the competent authorities approve its use in the context of the leak detection and repair programme referred to in paragraph 1 and in accordance with the elements set out in Part 1 of Annex I.

For protected steel > 16 bar, measures are in place to prevent any leakage through national/local pipeline integrity management legislation and guidance such as described in EN 1594. Incident related emissions (e.g. third party damage), are detected on occurrence and repaired as soon as possible.

Justification

The universal 3 months survey interval in the Commission’s proposal appears to be inspired by the non-European methane regulations of upstream assets. Transposing the intervals to all gas assets in mid and downstream segments is not an effective way to leak detection. Our proposal strives to keep the Commission’s prescriptive approach while reflecting the operators’ detailed knowledge of assets.

We proposed to define surveys not only by their interval, but also by the minimum leak size searched for. For midstream assets our approach relies on frequent surveys of larger leaks complemented by less frequent surveys of small leaks. This is in line with the well-accepted approach to minimize fugitive emissions by focusing on high-risk leaks with a higher priority.

For the downstream infrastructure, our experience supported by the publicly available data (US Environmental Protection Agency, Marcogaz) clearly shows that one of the key parameters that correlates with the risk of leaks is the material of the pipeline. We therefore propose to vary the survey intervals based on the material.

The leak rate values (20 g/h and 400 g/h) have been chosen for the following:

The 20 g/h level guarantees that a leak can be captured no matter the conditions and asset type.

The 400 g/h level makes it possible to capture the bigger leaks using common low-resolution technologies such as OGI cameras, that will allow a faster scan of a facility and a higher frequency check.

We are open to further discuss the values with stakeholders across the spectrum. We applaud to the Council’s decision to move from concentration-based (ppm) detection methods to general leak rate (g/h) requirements. Leak rates allow lawmakers to directly compare fugitive emissions to other sources of GHG emissions. With concentration readings, such comparisons are only possible for experienced experts, only for certain leak types, and only with limited accuracy.

The proposed survey intervals should be understood as the very minimum [the less constraining] that will be applied to each of the infrastructure type. Even if no leaks are found, the surveys will be repeated on a preventative basis to assure that the public demand for addressing fugitive emissions on a systemic policy level is fulfilled. While the minimum intervals in our proposal are longer than the three months is the original proposal, it must be noted that surveys of poorly performing assets will be checked more frequently.

Currently, the most common approach to set survey intervals reflects the state of individual assets. Well performing assets are surveyed less often than those that have had leaks in past surveys. While this approach can guarantee the optimal use of resources, we recognize the Commission’s choice to set the survey intervals in the Regulation. Our proposal aims at setting minimum survey intervals specific to each of the asset types while still allowing more frequent surveys of poorly performing assets. In some cases, limiting the intervals to a minimum will lead to an inefficient operation as the surveys will detect no leaks on well performing assets. In this sense the 60 months proposed for PE and protected steel at pressures below 16 bar can be considered as a high frequency based on the operator experience and regarding the high level of performance of these materials. Nevertheless, we recognize that such compromises are necessary to align with the EU’s climate targets.

In the long term we strive to formalize and unify the process of defining survey frequencies and detection methods in a CEN standard (see the report from this year’s Madrid Forum). In the meantime, the National Competent Authorities will evaluate the operator’s Leak Detection Programs – this is in agreement with the original Commission proposal.

To be noted that the mentioning to continuous monitoring system has been introduced in rev. 2 we support this because it is technology open for the future.

LDAR - Article 14

<p>4. Operators shall repair or replace all components found to be emitting 500 parts per million or more of methane.</p> <p>The repair or replacement of the components referred to in the first subparagraph shall take place immediately after detection, or as soon as possible thereafter but no later than five days after detection, provided operators can demonstrate that safety or technical considerations do not allow immediate action and provided operators establish a repair and monitoring schedule.</p>	<p>Paragraph 5 in our amendment proposal document:</p> <p>Operators shall repair or replace all components found to be emitting. 500 parts per million or more of methane</p> <p>The repair or replacement of the components referred to in the first subparagraph shall take place immediately after detection, or as soon as possible for a first attempt thereafter but no later than five thirty days, after detection, Where the repair referred to in the first subparagraph is not successful or possible provided operators can demonstrate that due to safety, administrative or technical considerations do not allow immediate action and provided the operators shall establish a repair and monitoring schedule for leaks above [20 g/h] no later than [30] days after detection. The repair and monitoring schedule referred to in the second subparagraph shall be set so that the found leakages are repaired without unnecessary delays and the environmental impact is minimized, while respecting the safety, administrative and technical considerations. The detailed procedures to do so will be described in the CEN standard or corresponding technical specification document referred in [new paragraph 1].</p>
<p>Safety and technical considerations that do not allow immediate action, as referred to in the second subparagraph, shall be limited to taking into account safety to personnel and humans in proximity, environmental impacts, concentration of methane loss, accessibility to component, availability of replacement of the component.</p>	<p>Safety, administrative and technical considerations, as referred to in the second and third subparagraph, shall be limited to taking into account</p> <ul style="list-style-type: none"> • safety to personnel and humans and objects in proximity, • scheduled maintenance, environmental impacts, significant deterioration of the gas supply, • disproportionate impact on the gas supply to end users, • permitting processes requirement or required administrative authorization, • concentration of methane loss, accessibility to component, • availability of replacement parts necessary for of the component repair
<p>Environmental impact considerations may include instances whereby repair could lead to a higher level of methane emissions than in the absence of the repair. Where a system shutdown is required before the repair or replacement can be undertaken, operators shall minimise the leak within one day of detection and shall repair the leak by the end of the next scheduled system shutdown or within a year, whichever is sooner.</p>	<p>Environmental impact considerations may include instances whereby repair could lead to a higher level of methane greenhouse gas emissions than in the absence of the repair.</p> <p>Where a system shutdown is required before the repair or replacement can be undertaken, operators shall minimise the leak within one day of detection and shall repair the leak by the end of the next scheduled system shutdown or within a year, whichever is sooner,</p>

In any case, the operator can justify to competent authorities not to repair a leak if the associated abatement costs are disproportionate. Proportionality criteria will be established by the relevant European competent authorities.

Justification

The gas industry is committed to address all detected leaks with no unnecessary delay. We applaud to the Council's decision to introduce the concept of a first attempt to repair (as per rev. 2). It guarantees that all leaks that can be easily repaired are repaired at the shortest possible time. Making a first attempt to repair all detected leaks regardless of their size is already a common practice in the gas industry. There is no reason for leaving small leaks not addressed if their repair is simple.

Operators' ability to repair leaks is limited by real-world constraints. A distribution system operator cannot begin excavation works on a busy street without a permit and a detailed plan. A transmission system operator cannot replace a valve sooner than the supplier delivers highly specific custom-made replacement. Neither transmission nor distribution operators should interfere with a safe delivery of gas to the customers. Careful planning is key to minimizing greenhouse emissions while respecting the constraints related to safety, security of supply, permitting, procuring replacement parts, and other factors. In this sense, we support the introduction of "scheduled maintenance" and "permitting process requirement" in rev. 2.

Our proposal diverges from the Commission's prescriptive approach to limit the time for a complete repair. Prescribing universal limits is not suitable because each leak is specific and faces specific constraints that cannot be controlled by the operator. Instead, we propose a general mandate to repair leaks with no unnecessary delay and with minimum overall environmental impact. This mandate can be enforced by verifying the repair schedule submitted to the competent authorities. The administrative burden for compiling an exhaustive repair monitoring schedule is too high if all detected leaks have to be included. The repair schedule should concentrate on the leaks above 20g/hr, still all detected leaks are repaired and will be documented annually as per paragraph 8.

Transmission and distribution operators are regulated entities whose cost effectiveness is evaluated by National Regulators. We have identified a collision between the mandate to repair certain leaks and to operate the grid in a cost-effective way. There are situations in which the avoided greenhouse gas emissions are low while the cost of repair is disproportionately high. To guarantee a cost-effective operation we find it necessary to cap the cost of repairs. The most relevant measure is the abatement cost expressed in Euros per avoided amount of methane emissions. We call the competent authorities (e.g. ACER, JRC) to set a limit on abatement cost.

While repairs of major transmission pipelines can lead to disruptions on EU level, repairs of local distribution network will only impact communities, businesses, or districts. Nevertheless, operators should not be directly forced to threaten the supply to any of any customers, even if it is a single remote household. In practice, operators often negotiate with customers and use mobile gas tanks to supply the customers during the repair. This requires planning and collaboration with external suppliers. Practical constraints such as this one related to the security and continuity of supply must be respected and anchored in the Regulation.

The thirty-day limit for repairs was set based on a consensus in the mid/down-stream sectors.

Venting and Flaring – Article 15

<p><i>New proposed paragraph</i></p>	<p>6. Where implementing venting or flaring provisions of paragraph 4 and 5 leads to an abatement efficiency lower than the reference values set by ACER as per Article 34 of this Regulation, the operators must minimize the vented emissions by available efficient means and include the justification in the report according to Article 17. In this case further mitigation measures will not be applied. [This will require amending Articles 3 and 34 accordingly]</p>
<p>Justification</p> <p>Transmission and distribution operators are regulated entities whose cost effectiveness is evaluated by National Regulatory Authorities. We have identified a collision between the requirement to implement some measures for reducing venting and flaring and to operate the grid in a cost-effective way. There are situations in which the avoided greenhouse gas emissions are low while the cost is disproportionately high. To guarantee a cost-effective operation we find it necessary to avoid implementing such provisions immediately after the Regulation enters into force. The most relevant measure is an abatement efficiency expressed in Euros per avoided amount of methane emissions. We call the competent authorities to set a limit on abatement efficiency. As the novel methods for reducing emissions evolve, their cost is going to decrease. When they reach the limits set by ACER, operators will implement them. This amendment will require updating the requirements on ACER defined in Articles 3 and 34.</p>	
<p><i>New proposed paragraph</i></p>	<p>7. Where implementing venting or flaring provisions requires an approval of relevant authorities, permitting, procuring, sufficient availability of appropriate equipment on the market and installing new equipment, operators shall proceed at the fastest possible schedule. The competent authorities may request the details of the schedule and request modifications. For venting and flaring events that happen during the implementation period the competent authorities shall waive the penalties arising from Article 30.</p>
<p>Justification</p> <p>The original Commission proposal requires the operators to limit venting and flaring immediately after the Regulation enters into force. The time required for implementing venting and flaring provisions varies and some steps such as permitting, or market delays are out of operators' control. In line with Recital 67: "Operators and competent authorities should be given a reasonable period in order to take the necessary preparatory actions to meet the requirements of this Regulation." we introduce new paragraph 7 that obliges the operators to proceed with no unnecessary delay but also avoids the situations in which the operators are penalized for venting and flaring that occur prior to finishing the implementation of corresponding measures.</p>	