

Aiming for Zero Methane Emissions Initiative

Guidance on near zero methane emissions

Introduction

Signatories to the Aiming for Zero Methane Emissions Initiative believe that virtually all methane emissions from the oil and gas industry can and should be avoided. This fundamental shift in mindset, to “*treat methane emissions as seriously as the industry treat safety incident or oil spills*” is the first steps towards the concrete ambition to “*strive to reach **near zero methane emissions** from operated oil and gas assets by 2030*”.

The following document was developed by OGCI member companies, with the aim to provide additional guidance to oil and gas operators, both current and potential Signatories on how *near zero methane emissions* could be interpreted and reached. The document includes examples of existing interpretations in the oil and gas industry of near zero methane emissions, applicable at a group and/or corporate level, that can be used by integrated companies, as well as upstream only, midstream and downstream companies.

Interpretation of near zero methane emissions is not limited to the examples below, for guidance only, and oil and gas operators are welcomed to set voluntary near zero methane emissions ambitions, aligned with their corporate strategies, asset portfolios and existing regulations.

Pathway towards near zero methane emissions

A general pathway towards near zero methane emissions is suggested, including the following elements for consideration: (1) inventory of methane emissions and/or examination of process flow diagrams to determine potential sources, (2) determination of potential emissions reductions from available solutions for quantification of methane emissions, improved by direct measurements where appropriate, (3) priority ranking (see paragraph below) and (4) systematic mitigation of methane emissions.

The above process can be implemented across a corporation's business units, regardless of type of assets or geography. The process should be continuously improved, to build on (1) lessons learned, (2) novel best practices, (3) new technologies and (4) regulation in place.

Additional systematic, continuous improvements can be added to the pathway, including but not limited to:

- Design of new builds with redundant requirement to minimize methane emissions, to be an integral part of the design.
- Develop practices, rules and systematic evaluation to be included in the operations manuals of the companies to minimize methane emissions, and a culture of transparency, reporting and rewarding methane detection, and mitigation.
- Set corporate targets for methane emission reduction (see sections below).
- Engage with non-operated joint venture (NOJV) partners to encourage adoption of similar solution pathways towards near zero methane emissions.

General guidance on ambitions for near zero methane emissions

The following tools and concepts can be used to help achieve individual companies' ambitions for near zero methane emissions.

Intensity vs absolute performance targets

Oil and gas operators are encouraged to set absolute and/or intensity methane reduction targets to guide their ambitions for near zero methane emissions. Both types of targets - intensity and absolute - have benefits: (1) intensity targets can help benchmark operators regardless of their size, asset mix, geographical footprint or decarbonization strategy, (2) absolute targets can provide added guidance in understanding future residual methane emissions from operated / non operated assets, and planned absolute reductions through mitigation and/or divestment.

In line with Principle #3 of the Initiative, calling for “Signatories [to] report annually and transparently on their methane emissions”, we encourage signatories to set methane emission reduction targets in line with their individual company strategy, and where possible, report on methane emissions.

Priority

We support the general rule of prioritization of methane emissions as a mechanism for signatories to achieve the fastest methane mitigation. Priority in this context can be applied to methane emissions at the asset level and / or the company/portfolio level.

A priority screening allows operators to start with the most significant opportunities where solutions exist, and continually improve performance over time.

Prioritization should be applied to emissions as low as reasonably practical, and reviewed periodically as part of a systematic review of methane sources, based on additional emissions data that become available, any design and/or operational changes in assets, or any change in portfolio under operational control.

Reasonable means and residual methane emissions

The Initiative’s signatories “will put in place **all reasonable means** to avoid methane venting and flaring, and to repair detected leaks, while preserving the safety of people and the integrity of operations.”

Mitigation options and shortlisted methane elimination solutions should be adapted to individual companies’ emission inventories and take into account (1) priority of the methane source (as per principle above), (2) safety of people and integrity of operations, (3) methane slip emissions associated with the normal use of natural gas-powered equipment as opposed to leaks, (4) technology availability and (5) costs, amongst other criteria deemed appropriate.

Continuous improvement of quantification and reporting

Principle 4. of the Initiative details: “As technology evolves, we will supplement methane emissions estimates with more monitoring and measurement technologies, and introduce new solutions to avoid methane emissions. We welcome the continued improvement of measurement, reporting and verification (MRV) mechanisms.”

Measurement of methane emissions is a complex challenge requiring tailored solutions, specific to the types of assets monitored, density of assets, geological and meteorological parameters and existing jurisdiction. The oil and gas industry is working to improve and deploy such measurement-based quantification methods, and continuous improvement is expected as technologies and policies evolve.

Oil and gas operators are strongly encouraged to supplement methane emissions estimates with more monitoring and measurement technologies, and introduce new solutions to avoid methane emissions, welcoming the continued improvement of measurement, reporting and verification (MRV) mechanisms.

Examples of ambitions for near zero methane emissions

Find below a non-exhaustive list of current near zero methane ambitions. These targets and ambitions are likely be updated as companies and organizations progress in their journey towards near zero methane emissions.

Upstream - OGCI methane intensity target

In 2021, OGCI member companies renewed their voluntary, collective methane upstream intensity target for the combined OGCI membership, to reach “well below 0.20%” intensity by 2025 (the previous target was set as 0.25%, and referenced as is by the OGMP2.0 – see below).

The OGCI methane intensity metric divides total volumes of methane emissions from both oil and natural gas value chains of operated assets by the total volumes of marketed natural gas, up to the first point of sale (OGCI Reporting Framework, [2023](#)). This methodology presents substantial benefits, including:

- (1) Providing an exhaustive picture of corporate methane intensity to enable strategic decision making.
- (2) Following a conservative approach (since methane emissions from both oil AND gas are divided by gas marketed production ONLY).
- (3) Simple and straightforward to grasp.

This threshold was adapted by the US Inflation Reduction Act (2022) for US oil and gas production facilities, and referenced by EDF (2022) and UNEP (2022).

Whilst appropriate at a group and / or corporate level, the OGCI methane intensity metric may not be the most practical and appropriate methodology to assess or benchmark the methane performance of individual upstream assets, particularly for oil and wet gas assets due to the exclusion of oil volumes from the metric's denominator. The choice of marketed gas as a denominator raises the relative intensity (in some cases exponentially) of these types of assets versus an approach with co-product allocation that would account for the fact that these assets produce mainly liquids, hence not accurately reflecting the methane emissions performance of the asset.

OGCI member companies recommend the use of the energy allocation method to estimate methane performance of individual upstream assets / natural gas value chains.

OGMP2.0

In addition to setting a reporting framework defining a pathway for each asset to progress towards an on-site methane measurement and reconciliation process, OGMP2.0 requires signatories to announce performance targets for their entire portfolio in scope. Targets can be expressed in terms of absolute reduction or near-zero intensity and have a 2025 or 2030 delivery timeframe. The OGMP Framework presents the CCAC Mineral Methane Initiative targets for the oil and gas industry as a whole:

- 45% [absolute] emissions reductions in methane emissions over estimated 2015 levels by 2025,
- 60-75% [absolute] reductions by 2030; or alternatively
- a 'near zero' emissions intensity, such as the OGCI collective average target for upstream operations of 0.25% by 2025.

Companies declare their own performance targets based on their own individual situation, in the context of the overall ambition to reduce industry emissions. Companies may adopt different targets, the latter can be ratcheted, depending on evolving industry best practice (OGMP2.0, 2023).

Midstream – including gathering, boosting, transmission, storage and LNG

A number of midstream operators are developing intensity metrics and associated intensity / absolute targets adapted to the type of assets run. No standardized KPI exists, however we note:

- Snam's methane intensity metric (Snam, 2023):
 - Dividing natural gas emissions of the transmission system by gas injected into the grid, expressed as a percentage, reporting 0.024% in 2022;
 - Dividing natural gas emissions of the underground gas storages by gas stored, expressed as a percentage, reporting 0.036% in 2022.
- Snam's absolute methane target to achieve 55% reduction of annual methane emissions by 2025 vs. 2015 (IMEO, 2022)
- GIE MARCOGAZ aggregated 2030 absolute methane emission estimations from 30 midstream companies from 17 different European countries, providing the following targets as potential references (GIE MARCOGAZ, 2023)¹:
 - Reduce total absolute methane emissions from midstream by 80% in 2030 vs. 2015.
 - Reduce total absolute methane emissions from midstream by 75% in 2030 vs. 2020.
- US Inflation Reduction Act (2022), setting a threshold of 0.11% of natural gas injected in the transmission network and sent for sale, and 0.05% of natural gas sent for sale from nonproduction facilities as part of the gathering and boosting segment of the value chain.

Full value chain – ONE Future Coalition methane intensity protocol

The ONE Future Coalition, a collection of US-based upstream, midstream, and gas distribution companies developed an overall target of a 1% leak rate across the entire natural gas value chain (ONE Future Coalition, 2023). The coalition set this goal by developing segment-specific targets within their protocol based on those segments' overall contribution to the natural gas value chain's emissions. The five segments each have their own target:

- gas production (0.28%)
- gas gathering and boosting (0.08%)

¹ The authors highlight that targets for year 2030 and the associated estimations bear more uncertainty vs 2025 estimates.

- gas processing (0.11%)
- gas transmission and storage (0.30%)
- gas distribution (0.22%).

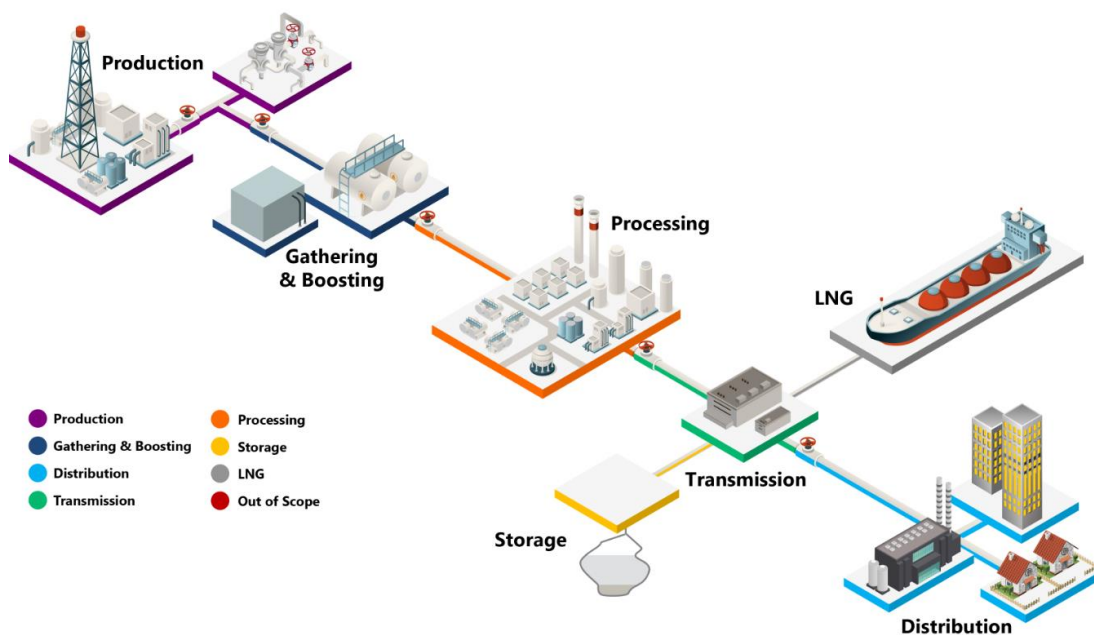
These targets are set for achievement by the year 2025, and each year members report their performance against the segment performance targets. The ONE Future coalition's framework has also been adopted as part of the US EPA's [methane challenge program](#).

Please note that (1) in 2021, ONE Future Coalition reported a collective methane intensity of 0.462% and (2) the methodology and targets above use of the energy allocation method to estimate methane performance of individual upstream assets / natural gas value chains (ONE Future Coalition, [2023](#)).

Protocols for methane emissions intensity calculation

GTI Veritas

Veritas' technical protocols calculate methane emissions for natural gas systems by six segments. Its methane emissions intensity protocol can be used to estimate emissions intensities of an operator's assets and practices. The protocol is complemented by additional guidance on Measurement, Reconciliation, Value Chain Summation and Assurance (Veritas, [2023](#)).



NGSI Methane Emissions Intensity

The Natural Gas Sustainability Initiative's (NGSI) Methane Emissions Intensity Protocol details a methodology for companies to consistently calculate and report methane emissions intensity. The NGSI protocol establishes intensity metrics for specific segments of the supply chain to respond to requests for a metric that provides comparable points of reference between companies. Using the NGSI protocol, companies will calculate and report methane emissions intensity based on total methane emissions associated with natural gas and the methane content of natural gas throughput for each segment in which they operate (NGSI, [2021](#)).

NGSI Segments	NGSI Metric
<ul style="list-style-type: none"> • Onshore Production • Gathering & Boosting • Processing • Transmission & Storage • Distribution 	$\frac{\text{Methane Emissions from Natural Gas}}{\text{Methane Content of Natural Gas Throughput}}$

MiQ Standard for natural gas certification

The MiQ Standard is an independent framework for assessing methane emissions from the production of natural gas, along with the policies and practices of the producers making it. It is used by independent auditors as a 'rulebook' for assessing how well a producer or facility is doing in terms of managing methane emissions from its operations (MiQ, [2023](#)).

An upstream methane intensity is calculated. If the operator produces or handles multiple products (such as natural gas, natural gas liquids and crude oil), emissions will be allocated to each product. Allocation is performed by source category allocation and can be performed at individual equipment level (MiQ, [2023](#)).

World Bank Zero Routine Flaring by 2030

Launched in 2015, the World Bank's initiative commits governments and oil companies, to end routine flaring no later than 2030. Zero Routine Flaring endorsers currently account for approximately 60% of total global gas flaring (World Bank, [2023](#)).

Oil companies that endorse the Initiative commit to:

1. *"Developing new operated oil fields according to plans that incorporate sustainable utilization or conservation of the field's associated gas without routine flaring. Oil companies with routine flaring at existing operated oil fields will seek to implement economically viable solutions to eliminate this legacy flaring as soon as possible, and no later than 2030."*
2. *"Publicly report flaring and progress towards the Initiative on an annual basis and agree to the World Bank aggregating and reporting the same (World Bank, [2023](#))."*

World Bank definitions of routine, safely and non-routine flaring can be found [here](#).