

# Methane policy recommendations for the EU

Monitoring, Reporting & Verification of  
Oil and Gas methane emissions

## I. CONTEXT

Today, the oil and gas industry has a methane-emissions data challenge. In many regions emissions data are quantified using generic emissions factor-based calculations, not an accurate quantification based on measurements, simulation tools and engineering calculations. There are large differences in the potential for methane emissions, depending on the volumes produced, the installation age and type of infrastructure and whether such infrastructure is installed offshore or onshore, between unconventional or conventional production, and also depending on the regulatory regime they operate under. Quantification methods, which rely on generic emissions factors can be inaccurate and frequently under- or overestimate emissions. Improving the accuracy of emission quantification is necessary to better manage the methane emission issue including focus of efforts on the high emission sources first and instill confidence that progress is being made. Encouragingly, advances in methane detection and measurement-based quantification technology are expected to support robust methane quantification across varying spatial and temporal scales<sup>1</sup>.

Published in October 2020, the EU Methane Strategy stated an intention for the Commission to table a legislative proposal on compulsory measurement, reporting and verification (MRV) for all energy-related methane emissions, building on work by the Oil and Gas Methane Partnership (OGMP) to frame a path for the oil and gas industry to achieve a standard for credible reporting of methane emissions. The new framework, OGMP 2.0, commits participating companies to increase the accuracy and granularity of their global methane emissions reporting to a gold standard<sup>2</sup> within 3 years for operated assets and 5 years for non-operated assets. In February 2021 the European Commission launched a stakeholder consultation on the proposed legislation.

In partnership with the United Nations Environmental Programme (UNEP), the Climate and Clean Air Coalition (CCAC) and the International Energy Agency, the Commission will support the establishment of an independent International Methane Emissions Observatory (IMEO), tasked with collecting, reconciling, verifying and publishing anthropogenic methane emissions data at a global level. The observatory would be anchored in a United Nations framework. The observatory will build on several initiatives such as the OGMP and the global methane science studies as part of the CCAC<sup>3</sup>. IMEO will collect industry data through OGMP (and/or the EU MRV framework), as well as from other independent sources to aid in ensuring all stakeholders are assured that data is robust: accurate and independently verified.

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<sup>1</sup> Mogstad et. al. "Hitting the Mark: Improving the Credibility of Industry Methane Data", Environmental Defense Fund, 2020

<sup>2</sup> The 'gold standard' is outlined in OGMP2.0 Framework - To achieve 'gold standard', a company must demonstrate an explicit and credible path to the required reporting levels within the required period. The level of progress and timely achievement of Level 4/5 reporting defines gold standard performance.

<sup>3</sup> European Commission "EU strategy to reduce methane emissions", EC Brussels, 14.10.2020

## II. FEATURES OF AN EFFECTIVE FUTURE MRV LEGISLATION

High quality and verifiable methane emissions data is a key enabler of policies that hinge on credible quantification of emissions. A scientifically rigorous and ultimately global MRV standard should be developed and be applicable to the energy sector. Quantification methodologies for individual sources of methane emissions should be improved by utilizing more accurate measurements, specific emissions factors, simulation tools and/or detailed engineering calculations, depending upon the type of source<sup>4</sup> and the specific operational parameters. Site<sup>5</sup> level and basin level measurements (technologies at multiple scales, e.g., satellite, aerial, ground based) should be also undertaken to reinforce and challenge, as necessary, source level-based estimates. Note that reporting at the asset level is possible, i.e., representing multiple samples of sites within a business or organizational unit, or single, complex sites (e.g., a processing facility). However, quantification always occur at distinct physical units, i.e., sources, sites, or basins, but not at assets (even though in some instances an asset is the same as a site).

- **Integrate measurement into emissions estimates**

To accurately quantify methane emissions operators should combine bottom-up source level measurements and utilize specific emission factors, engineering calculations and simulation tools where equally accurate, comparing and reconciling these findings with top-down or site-level methane emissions measurements taken from a statistically representative sample of sites. The combination of site level and source-based quantification methodologies are expected to generate more accurate data regarding methane emissions.

- **Increase the transparency and granularity of methane emissions reporting.**

Evolving technology available to companies, increasing soundness of quantification methods and the degree of sophistication with which they are applied, as well as the accuracy of the data they produce, are essential for robust emissions reporting and related emissions mitigation actions. Such reporting – when done in a reliable, comparable, and repeatable manner - also supports the credibility of emissions data with external stakeholders. Additional information such as the methods applied for the establishment of measurement and sampling plan, emissions inventories broken out by region, country and/or basin, and the summary findings from third-party audits all contribute to the trustworthiness of methane disclosure.

It is important to address the tension between transparency and confidentiality. The MRV legislation should seek to maximize transparency but be aware of where “*red-lines*” exist, data that cannot be shared due to confidentiality reasons. For example, where disclosure of a category of aggregated data would exceptionally undermine the protection of commercial interests, then a different level of aggregation of

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<sup>4</sup> Source: a component within a process or equipment that releases methane to the atmosphere either intentionally or unintentionally, intermittently or persistently. (e.g. a valve, a leaking flange connection, a pneumatic controller, a compressor seal, a flare, etc.)

<sup>5</sup> Site: all sources within a physical unit (e.g., production battery, compressor station, processing plant, underground gas storage, gas grid segment, liquefaction plant, etc.). Site-level measurement (i.e. Level 5) reporting would consider sites as the appropriate level to reasonably and transparently reconcile Level 4 and Level 5, but not introduce needless complexity or cost in reporting below a venture level (e.g. combined wells and gathering systems comprising a production asset, not each individual well pad or pipeline)”.

that specific data could be applied, at the request of the company, to protect such interests. Where application of a different level of aggregation is not possible, regulation might not require making those data publicly available.

Non-aggregated data should be available to regulators and verification entities. The legal basis for data protection must be carefully considered, including if it should be designed in accordance with EU data protection legislation.

- **Ensure the comparability of reporting**

Data on methane emissions should be provided in such a way that users such as investors, regulators, and customers, can understand how companies compare with one another with regard to methane emission performance. Comparability demands consistency and standardization in what, where, and how information is provided. Thus, an additional goal should be the establishment of a uniform methodology for reporting methane emissions from the energy value chains, while allowing for incorporation of technology and methodology advances.

Increased transparency and granularity of reporting, combined with this comparability, may enable comparisons between gas supply chains, as well as other energy types, forming a basis for the energy product to be credibly and demonstrably differentiated in terms of methane emissions intensity.

- **Validate reported methane emission data through a qualified and independent third- party.**

Reconciliation between company reported emissions and independent measurement of methane emissions is critical for improved data credibility. The International Methane Emissions Observatory (IMEO) could play a role in reconciling and verifying company reported data using top down/site-level measurements (e.g. aerial, satellite), and scientific studies.

Companies that report emissions data could take additional steps to ensure the validity and credibility of information. External verification by an independent entity based on an internationally agreed and effectively implemented standard can improve accuracy and public confidence in reported emissions data. If such verification schemes were to be carried out, such third-party verifiers would need access to the sites where emissions occur and the technical expertise to assess both the accuracy and integrity of the data as well as the quality of the quantification methods based on the above-mentioned international standard. Such an approach, and international standard, would be novel and does not currently exist.

The Commission may also regulate the verification activities and accreditation of verifiers pursuant to legislation on monitoring, reporting and verification of methane emissions from the energy industry.

- **Consider learnings generated in the context of new, planned EU legislation on Leak Detection and Repair programs**

With the planned development and implementation of EU legislation on LDAR it can be expected that new insights are generated about methane emissions. While such data has the general objective to inform leak repair actions, it can inform MRV about leak locations too, while recognizing that the focus of LDAR programs is on the “finding and fixing” of leaks rather than on the quantification of emissions.

### III. THE ROLE OF OIL AND GAS METHANE PARTNERSHIP 2.0 REPORTING FRAMEWORK

The Oil and Gas Methane Partnership (OGMP) is a multi-stakeholder partnership with representatives from governments, international organizations, non-government organizations and the oil and gas industry. OGMP have developed a methane emissions reporting framework to provide a standardized format for methane emissions reporting and performance, the OGMP 2.0 initiative was launched in November 2020<sup>6</sup>.

The Commission announced in its consultation that it intends to base its legislative proposals on MRV on the methodology of the OGMP 2.0 reporting framework, considering it the best existing vehicle for improving MRV capabilities of companies in the energy sector.

The OGMP 2.0 reporting framework addresses many of the EU goals with regard to an MRV framework.

- **Integrate measurement into emissions estimates.**

The framework understands that the pathway to quantifying emissions is a challenging endeavor. As such there are five levels of reporting, with level four/five regarded as ‘gold standard’ reporting. The framework incorporates a pathway that ratchets up the inclusion, and sophistication of quantification methodologies (i.e. from asset type to source type specific emissions factors; from generic emission factors to robust engineering calculations, simulations, and direct measurement). Beyond the generic emissions factors used in some cases, level four requires the establishment of source-specific emission factors and activity factors. Source-level measurement and sampling may be used as the basis for establishing these specific EFs and AFs, though other source specific quantification methodologies such as simulation tools and detailed engineering calculations (e.g. as referenced in existing OGMP TGDs) may be used where appropriate. The reporting at level five requires the use of site-level measurements that quantify site-level emissions and will potentially allow for reconciliation against source-level quantification.

The framework is also cognizant of the uncertainty in quantifying methane emissions. Incorporating specific source level quantification methodologies, with site level emissions measurement makes it possible to quantify methane emissions with increased confidence. There will still be significant uncertainty associated with data reported at level one to three that is based on generic emission factors, and that is why signatories are expected to strive for reporting level 4 and 5, the so-called gold standard.

- **Increase the transparency and granularity of methane emissions reporting.**

The framework applies to oil and gas assets along the natural gas supply chain where material quantities of methane can be emitted. This includes upstream exploration and production, gathering and processing, liquefaction and regasification terminals, gas transmission, underground gas storage and distribution. Methane emissions from oil product manufacturing (i.e. refineries and chemical plants) and gas utilization are excluded. The framework applies to all sources of methane emissions. This includes emissions from venting, fugitive emissions and emissions due to incomplete combustion (e.g. heating, power generation, flaring). The framework crucially applies to the reporting of scope 1 methane emission from both operated

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<sup>6</sup> United Nations Environment Programme (UNEP), “Oil and Gas Methane Partnership (OGMP) 2.0 Framework”

and non-operated ventures. It also importantly calls for increased transparency in the methodology used for reported numbers.

- **Ensure the comparability of reporting**

The OGMP 2.0 template for upstream reporting is based on the OGCI template and OGMP 1.0 template but expanded for the requirements set out above. The OGMP 2.0 template for mid and downstream reporting is based on the Marcogaz methodology. Both templates are already finalized in the OGMP. These common reporting templates, with a shared taxonomy of sources, well-defined levels of reporting uncertainty, and common units to represent emissions, will aid in ensuring the comparability of reporting.

- **Validate reported methane emissions data through a qualified and independent third- party.**

It is planned that UNEP and the EC will establish an International Methane Emissions Observatory (IMEO) to process and aggregate methane data. It is proposed that data reported into OGMP 2.0 will be made available to IMEO on the same basis as is set out in the framework.

IMEO is intended to interconnect activities across the methane ecosystem. It will collect data from OGMP 2.0 company asset reporting, commissioned science measurement studies, satellite data and national inventories. It will reconcile inconsistencies and identify gaps between these datasets. IMEO will integrate and analyze data from all sources and disclose an improved characterization of global methane emissions, including verifying progress towards announced targets by OGMP 2.0 companies. It is expected that IMEO will also generate a full methane emissions dataset, an annual methane emissions report, and direct measurement studies<sup>7</sup>.

#### IV. ADDITIONAL RECOMMENDATIONS

- Methodologies and technologies for empirical measurement of actual emissions are evolving and improving rapidly. An MRV legislative proposal should be able to accommodate innovative technologies and methods that emerge in the future. Such innovations may have the potential to reduce cost, increase the coverage of measurement approaches, and increase the quality of emissions data. It should also require the emerging technologies to be assessed to ensure that measurement-based emission quantification is increasingly accurate and comparable across technologies. Development of such a process is underway (e.g. work by Colorado State University), but not yet completed.
- Policy makers and regulators should maximize synergies between the MRV standard, the current National Inventory Reports and current working practices and technology standards. The MRV standard should recognize that the industry is comprised of different oil and gas assets which may require a tailored approach.
- A useful reporting framework should distinguish changes in emissions resulting from methodology changes and those resulting from authentic changes in emissions. With better quantification methodologies, as well as detection and measurement-based quantification technologies, it may appear that a certain asset's

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<sup>7</sup> M. Caltagirone, March 2021, "IMEO for OGMP", Presentation at OGMP Steering Group, Online

emissions have increased or decreased between reporting periods, when in fact a large portion of such a change may be due to better quantification of sources from the one reporting period to the next. Companies should be incentivized to increase the quality of the data, even if this means that reported emissions increase.

- The role of the IMEO needs to be clarified in relation to the verification and validation of methane emissions.
- Consider verification of methane emissions by institutions such as government authorities, or accredited national or international private companies. This process must include the measurement of a sample of emissions from relevant facilities by accredited independent institutions.
- The MRV regulation should include efforts on quantifying “super-emitters” of methane.
- Ensure that the methodologies for the collection, reporting and verification of data and the resulting aggregated data are transparent and publicly available in the national inventories published by the appropriate body<sup>8</sup>.

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<sup>8</sup> Bassam Fattouh James Henderson Jonathan Stern “Measurement, reporting, verification, and certification of methane emissions from fossil fuel production and natural gas value chains”, <https://www.g20-insights.org/> November 22, 2020

## Companies supporting the recommendations

