Public Consultation
Inception Impact Assessment

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Feedback on the Proposal for a Legislative Act to Reduce Methane Emissions in the Oil, Gas and Coal Sectors

INTRODUCTION

With the adoption of the *EU Strategy to Reduce Methane Emissions* (also referred to as Methane Strategy), the Commission has committed to submit legislation on measurement, reporting and verification (MRV) and leak detection and repair (LDAR), while also giving consideration to other equally important measures, such as those to eliminate routine venting and flaring and set out methane emission standards. The Inception Impact Assessment (IIA) provides a good basis for considering how best to address methane emissions but should be improved in several areas, as outlined below.

LEGAL BASE

The IIA states that Article 194 of the Treaty on the Functioning of the European Union (TFEU) provides the legal base for the proposal.[1] Following a review of Article 194 TFEU and relevant case law, however, it is not clear that this legal base is proper given the aim and content of the legislative act. We recommend the Commission solicit the input of its legal services to determine the appropriate legal base and, to this end, provide an analysis to support basing the proposal on Article 192 TFEU.

First, by its own terms, Article 194 TFEU cannot provide the legal base. Article 194 TFEU provides four objectives of Union policy on energy for which Article 194 TFEU may be relied upon to adopt measures:

Article 194

1. In the context of the establishment and functioning of the internal market and with regard for the need to preserve and improve the environment, Union policy on energy shall aim, in a spirit of solidarity between Member States, to:

    (a) ensure the functioning of the energy market;
    (b) ensure security of energy supply in the Union;
    (c) promote energy efficiency and energy saving and the development of new and renewable forms of energy; and
    (d) promote the interconnection of energy networks.

2. Without prejudice to the application of other provisions of the Treaties, the European Parliament and the Council, acting in accordance with the ordinary legislative procedure, shall establish the measures necessary to achieve the objectives in paragraph 1. Such measures shall be adopted after consultation of the Economic and Social Committee and the Committee of the Regions.

    Such measures shall not affect a Member State's right to determine the conditions for exploiting its energy resources, its choice between different energy sources and the general structure of its energy supply, without prejudice to Article 192(2)(c).

Neither the specific objectives nor the policy options (measures) outlined in the IIA implicate any of the four objectives identified in Article 194 TFEU. In other words, the objectives and policy options implicate neither the functioning of the energy market nor the security of supply in the Union nor the promotion of energy efficiency nor the development of renewable energy or the interconnection of networks.

For its part, Article 192 TFEU shall be used where one or more of the following objectives are pursued: preserving, protecting and improving the quality of the environment; protecting human health; prudent and rational utilisation of natural resources; or promoting measures at international level to deal with regional or worldwide environmental problems, and in particular combating climate change. Reducing methane emissions in the energy sector is clearly related to preserving, protecting and improving the quality of the environment. Article 192 TFEU is therefore the proper legal base.

Second, the aim and content of the relevant proposals are clearly related to environmental protection. It is well-established by the Court of Justice of the European Union (CJEU) that the determination of legal basis is an impartial analysis based on objective criteria that must be amenable to judicial review, including in particular the aim and content of the measure.[2] It is a legal question based on the aim and content of the legislative act, governed by the Treaties and for which substantial case law from the CJEU exists.[3] Here, both the specific aim and content of the proposal—that is, the specific objectives and policy proposals under consideration—are related to environmental protection.

On one hand, the specific objectives (aim) of the proposal are environmental, *i.e.* to reduce methane emissions. This is evidenced throughout the IIA. For example, the title of the initiative is a proposal for a legislative act "to reduce methane emissions in the oil, gas and coal sectors." Moreover, when the Commission justifies new legislation, it describes the problem it aims to tackle as there currently being "no policy directly regulating the reduction of anthropogenic (man-made) methane emissions,

around 19% of which come from the energy sector" and "no EU legislation which addresses specifically methane emissions of the energy system via either MRV, LDAR or limits on venting and flaring of methane." The Commission further references that, as a signing party to the Paris Agreement, the EU is further "required to provide a national inventory report of anthropogenic greenhouse gas emissions by sources, prepared using good practice methodologies." Environmental purpose is most evident, though, when the IIA describes the specific objectives of the proposal:

> The specific objectives of this policy proposal are i) to improve the availability and accuracy of information on the specific sources of methane emissions associated with energy consumed in the EU, and ii) to put in place EU level obligations on companies to mitigate those emissions across different segments of the energy supply chain in the areas of methane leakage, venting and flaring mitigation, which together cover the main sources of methane emissions in the energy sector

On the other hand, the policy options (content) under consideration are environmental, aimed at measuring and mitigating methane emissions. As described by the Commission, the proposal to measure and mitigate methane emissions will be achieved by reviewing and adopting a measurement, reporting and verification (MRV) framework that is coupled with an obligation to improve leak detection and repair (LDAR) and action to eliminate routine venting and flaring, among other things.[4] The fact that the policy options implicate the energy sector does not make it Union policy on energy rather a plain reading of the proposal shows it is Union climate policy applied to the energy sector.

Third, even assuming the proposal has multiple objectives that fall within both Article 192 TFEU and Article 194 TFEU, which it does not, the predominant purpose of the proposal is to measure and mitigate methane emissions—an environmental objective—and therefore Article 192 TFEU should be relied upon. The CJEU has found that, "[i]f examination of a [Union] measure reveals that it pursues a twofold purpose or that it has a twofold component and if one of those is identifiable as the main or predominant purpose or component, whereas the other is merely incidental, the act must be based on a single legal basis, namely that required by the main or predominant purpose or component."[5] Since both the aim (to measure and mitigate methane emissions) and content (policy options to measure and mitigate methane emissions) of the proposed legislative act reveals that its main or predominant purpose is to protect the environment, it should be based on a single legal base, namely Article 192 TFEU.

For these reasons, the Commission should change the legal base of the proposal to Article 192 TFEU.

MEASUREMENT, REPORTING AND VERIFICATION (MRV)

A strong Measurement, Reporting and Verification (MRV) framework is the backbone of any program to mitigate methane emissions. It allows for the measurement of progress and the assurance of data while providing environmental and societal value to the whole policy. Methane emissions have been the source of debate for years, and while the understanding of emissions continues to increase there will always be a level of uncertainty and question of low bias in any emissions inventory. This is due in part to the nature of emission sources in the oil and gas sector, especially events known as super emitters, which by their nature should be one of the mitigation target categories. Super-emitters have so far not been captured in standard bottom-up inventories because of the lack of comprehensive measurements. As a result, super-emitters are also partially the cause of the demonstrated low bias in emission inventories. But as our understanding of emissions has increased, so too have our estimates of total emissions, meaning mitigating methane is that much more important.

The Commission is proposing several options for an MRV framework that rely on variations of a voluntary industry program known as the Oil and Gas Methane Partnership (OGMP). It is important to note though that OGMP is designed to specify the reporting requirements, which represent an improvement over existing methodologies for estimating emissions. While OGMP2.0 does not list any precise measurement technologies, it specifies the need and the general approaches for measurements at the highest reporting levels. OGMP's reporting procedures and methodologies for emissions quantifications can be considered as a starting point for the reporting elements of the EU MRV framework, but the Commission should improve upon the program and enshrine it in EU legislation rather than simply relying on a voluntary third-party system.

- **Measurement**. In the near term, emissions measurement should rely on comprehensive equipment and facility surveys, granular data down to the asset or equipment, and application of the most up-to-date emission factors for the lower reporting levels. Within two years, emissions monitoring must move to include actual measurement data, i.e., require the highest reporting levels.

- **Reporting**: Companies should be required to report detailed emissions information; not just overall aggregate emissions at the country or asset level, but details on equipment counts, emission factors used and, later, measurement methods and results. The IIA currently refers to two instruments in place in the EU legislative framework that provide information on the methane emissions: Regulation 2006/166 on the E-PRTR and Directive 2010/75 on industrial emissions. As it is noted, these will also be revised under the EU Green Deal. We applaud this revision and note that it should be aligned with the overall needs mentioned here, creating better instruments for reporting and monitoring the emissions from the energy sector. OGMP aggregates all data and only publishes a summary of the data on an annual basis. An EU methane strategy, however, cannot be based on aggregated data, but rather needs granular data preferably down to the source. This kind of data allows for better policy design in the future and for better estimates of emissions and mitigation. The data should be made available to the public in an easy to analyse format (*i.e.* databases that can be saved in tabular and flexible formats rather than pdf files). A limited amount of data, such as that deemed "confidential business information," may not be made publicly available but should still be collected by regulators and be made available to third-party verifiers.

- **Verification**: Independent third-party verification of reported emissions, reporting method, and measurement data and method is a critical piece of the process. Granular reporting, as outlined previously, is critical for verification since a third party would not have the ability to judge the accuracy of reported data without this detailed data.

LEAK DETECTION AND REPAIR (LDAR)

In the IIA, the Commission states:

> *The basis of all policy options to be assessed by the Commission in the area of mitigation will be measures to conduct leakage detection and repair according to prevailing and emerging best practices, including from industry, across different segments of the supply chain. Variations in options could be in terms of sectoral scope (thus, going beyond the scope of fossil gas and also including oil, coal and*

biogas/biomethane) and supply chain coverage (including or not including imports), as well as the types of methodologies and/or some of the key elements of methodologies, such as the frequency of checks, standards, as appropriate.[6]

A strong LDAR program is a critical element of the EU's strategy to reduce methane emissions. The inception impact statement reflects the correct questions on program design and scope, but in order to achieve the goals of the 2030 Climate Target Plan, the European Green Deal and the EU Methane Strategy, the Commission should seek to design an LDAR program truly reflective of the best policies and practices available, with the ability for new technologies and practices to be easily incorporated over time in a timely manner. On scope, the Commission needs to include fossil gas, oil, and coal, and should include biogas/biomethane. In addition, the program should cover the entire supply chain and segments from production to distribution. In addition, the Commission should find ways to incorporate the goals of the LDAR programme into the elements of the Commission's policy to address methane emissions from imported fossil fuels.

LDAR can identify both "fugitive" emissions and improper/excessive venting from equipment that is designed to vent gas. The same methods used for leak detection at valves, connectors, and other leaking components and equipment at oil and gas facilities can be used to spot significant operational issues at pneumatic controllers, compressors, and other types of equipment. A variety of operational factors can cause equipment to emit more than it was designed to emit. A leak detection survey revealing excessive emissions can alert operators to a venting problem that needs to be fixed. Moreover, if a comprehensive LDAR program is already being implemented at a facility, the marginal cost of extending that program to excessive equipment venting would likely be very modest, especially if an operator uses an infrared camera or similar technology to detect leaks. It is important to note that repairing these pieces of equipment won't eliminate venting from the equipment. Only a requirement to replace existing equipment designed to leak with zero emitting technologies, combined with zero emitting design requirements for any new installations, will accomplish this.

Three key elements should be included in the design of the EU LDAR framework: (i) frequent instrument-based leak detection, *i.e.* periodic site surveys (monthly is best, at least quarterly) or continuous monitoring with advanced technologies; (ii) rapid repair and re-survey, *i.e.* strict timelines for repair of all components found to be leaking; and (iii) recordkeeping, *i.e.* standardized recordkeeping and reports to competent authorities to verify that inspections were conducted and repairs were made.

More detail on each of these components is below.

1. **Leak Detection**

Various approaches to leak detection exist and should be promoted.

- **Optical Gas Imaging (OGI) Cameras**. Infrared (IR) cameras allow users to "see" leaking gases by creating images with infrared light, which is absorbed by fossil gas, using technology similar to night vision glasses. OGI camera operators—employed either by the site operator or a third-party firm—must visit each site on a regular schedule to survey for leaks. Inspection time varies based on the size and number of components at a site. Small well sites can be surveyed by a single technician in 3 hours or less, while large well sites can require up to 6 work hours. Compressor stations can typically be fully surveyed in 1-3 working days.[7] In order to achieve the maximum emissions reductions, leak detection surveys with OGI cameras must be conducted frequently – quarterly or, preferably, monthly. Based on U.S. EPA data,

emissions from leaks can be cut by 90% with monthly inspections or 80% with quarterly inspections.[8]

- **Alternative/Advanced Leak Detection Technologies**. The leak detection technology landscape is highly dynamic, with innovation happening in real time. A leak reduction policy should create space for new technologies, which may be able to deliver improved environmental performance at reduced cost and result in additional methane mitigation. Several technologies in development hold promise as potentially more efficient ways to identify leaks and super-emitters. Many recent scientific studies have demonstrated the potential for new technologies to rapidly detect leaks in a variety of operating conditions.[9] These alternatives to OGI are often mounted on mobile platforms such as trucks, drones, and planes and have the potential to cover large areas in a short time, and therefore significantly reduce the cost of LDAR. Many jurisdictions' regulations contain provisions which lay out criteria and a process for regulators to use to evaluate newer technologies for leak detection.[10] These technologies take diverse approaches: sensing methane from specialized instruments mounted on road vehicles, towers, aircraft, or even satellites; or, alternatively, developing low-cost sensors that can detect emissions in real-time and could be widely dispersed for use at individual well pads or on vehicles used to service oil and gas sites. At the same time, regulators and academics are developing methods to quantitatively compare these technologies to current LDAR approaches, so that the new, more efficient technologies can quickly be used once they are shown to be as effective as periodic leak detection surveys.[11] These efforts will reduce the cost of LDAR substantially over the coming years, lowering the cost of aggressively reducing leak emissions, including those from super-emitters.

Advanced leak detection technologies and add-on technologies for OGI cameras are highly likely to reduce the cost of quantifying leaks. However, quantification is not necessary for the success of an LDAR programme. Measurement can add costs to the LDAR programme and sometimes can delay the repair of leaks. But as new technologies are introduced this is likely to change. An LDAR programme that does not include a requirement for measurement will need to make assumptions about the amount of methane reduced through the program and the documented repairs. Most of the time it is almost always better to quickly fix leaks, rather than quantify.

As noted above, the leak detection survey should assess the site for both fugitives leaking from equipment components, but also equipment such as compressors and pneumatic devices that are venting in excess of what they were designed to vent.

2. **Repair & Re-survey**

A strong LDAR framework should require leaks to be repaired as soon as possible—within 5 days for most leaks or within 1 year for a small subset of critical components[12] that cannot be repaired without a shutdown. Following this, the formerly leaking component must be re-surveyed to ensure that repair was successful.

3. **Recordkeeping**.

Robust, detailed recordkeeping and reporting requirements are critical to compliance monitoring and enforcement. For example, a strong policy would require operators to adhere to detailed requirements to ensure their leak detection devices are operating properly, retain comprehensive

records of each inspection, tag or retain digital photographs of each component on the delayed repair list, and submit records in a standardized manner to competent authorities. Data from these surveys should also be made public in some form to provide important information on the efficacy of LDAR programmes.

BAN ON ROUTINE VENTING AND FLARING (BRVF)

As the Commission notes within numerous passages in the Methane Strategy, eliminating routing venting and flaring is imperative. For example, the Commission states:

> **The greatest benefits in net economic, environmental and social terms would be achieved by reducing venting and flaring**, reducing leaks in fossil gas and oil production, transmission and combustion, and reducing methane emissions from coalmines. **Venting and routine flaring should be restricted to unavoidable circumstances, for example for safety reasons, and recorded for verification purposes**.[13]
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> The Commission will table in 2021 a legislative proposal on compulsory measurement, reporting and verification for all energy-related methane emissions, building on the Oil and Gas Methane Partnership (OGMP) methodology. Improving the quality of emissions data through mandatory higher-tier reporting by companies will also help Member States to improve their reporting to the United Nations Framework Convention on Climate Change (UNFCCC). It may therefore also lead to an increased share of higher-tier reporting for the concerned key categories in the EU inventory.
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> In addition, such legislation should include an obligation to improve leak detection and repair (LDAR) of leaks on all fossil gas infrastructure, as well as any other infrastructure that produces, transports or uses fossil gas, including as a feedstock. **In an effort to tackle emissions from venting and flaring, LDAR obligations will address flaring efficiency as a priority.** Furthermore, the Commission will examine options as regards possible methane emission reduction targets or standards or other incentives on fossil energy consumed and imported in the EU.[14]
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> The Commission will examine the **options available in view of proposing legislation on eliminating routine venting and flaring in the energy sector covering the full supply chain, up to the point of production**. This would complement the 2030 objectives of the World Bank's Zero Routine Flaring initiative, which the Commission intends to support alongside its support for the World Bank's Global Gas Flaring Reduction Partnership. The Commission will also make it **a priority to explore a more precise standard for flaring efficiency, with the objective of further reducing both fugitive emissions and emissions from incomplete combustion of fuels**. These mitigation options are generally cost-effective, and a key component of methane-emission mitigation in the energy sector, with combustion accounting for a significant portion of EU emissions.[15]

The Commission itself has made the case for immediate action to eliminate routine venting and flaring and, in this regard, we see no reason why a ban on routine venting and flaring throughout the supply chain should not be included in the MRV and LDAR framework. With respect to venting, as noted in the LDAR section above, venting is not just venting from wells or large purposeful releases. Venting also occurs from equipment specifically designed to release gas through normal operation. A venting ban should also apply to venting by design equipment. This would likely need to include requirements for equipment replacement at existing sites and zero emission design requirements for any new facilities constructed in the EU. With respect to flaring, in 2020, according to satellite data evaluated by the World Bank, flaring jumped to levels last seen in 2009, and two of the EU's major suppliers, Russia and Iraq, were two of the largest polluters.[16]

The drivers and reasons of why venting and flaring happens vary across regions. Norway's ban on venting and flaring, combined with a CO_2 tax appears to be a performing system which may be contextually relevant to the EU context too on account of the similarity in political, administrative and legal traditions. The two core pieces of legislation, Norway's regulations on measurement of petroleum for fiscal purposes and for calculation of CO_2 tax[17] (the measurement regulations) and the Regulations relating to petroleum activities [18] can broadly be summarised as follows:

Problem and Main Driver	Policy Options
Lack of a clear business driver / price on pollution	▪ Require polluters to pay a flaring tax, which compels the regulator to collect the tax and assign to polluters the responsibility for fiscal measurement
Lack of pre-drilling planning	▪ Requires gas capture plan as prerequisite to approval of an APD ▪ Norway requires flaring permits and contingency plans from the production license application phase
Insufficient capture requirements during drilling and completion	▪ Extends capture requirements to all phases of production
Insufficient limits on venting	▪ Broad prohibition of venting with narrow exceptions (safety, etc.)
Insufficient limits on flaring of associated gas	▪ Volumetric limit based on GHG emission reduction goals ▪ Flaring only by permit ▪ Taxes and royalties assessed on all gas produced
Lack of reporting and transparency	▪ Requires all operators to report all flared gas on a monthly basis ▪ Reports should be public and easily accessible
Lack of measurement requirements and use of instruments that cannot be manipulated	▪ Requires the use of instruments and tools that cannot be manipulated ▪ Require that the regulator is present from the moment the operator places an order to buy instruments (design phase) to calibration of the instruments and tools to decommissioning

We would also like to draw the Commission's attention to venting of methane at coal demethanisation stations. Demethanisation stations collect methane drained prior to exploration of coal mine corridors. This methane is highly concentrated and therefore almost ready-to-use. In Poland, 16% of all coal mine methane emissions occur from demethanisation stations, despite very little investment needed to avoid these emissions. This procedure cannot be understood from an ecological and economical perspective. We urge the Commision to adopt a strict ban on venting methane from demethanisation stations in the Methane Strategy.

PERFORMANCE STANDARDS, BENCHMARKS AND EMISSIONS LIMITS

The Methane Strategy notes that, in the absence of significant commitments from international partners, the Commission will examine options regarding possible methane emissions reduction targets, standards or other incentives on fossil energy consumed in and imported into the EU.[19] The Methane Strategy also states that such an examination of options should include comprehensive assessment of the implications of putting such an instrument in place, including in terms of the independent verification and compliance checks that will be required to effectively enforce it, and the potential contributions of such an instrument towards overall reductions in global methane emissions.

This section outlines the need for methane emissions reduction targets, standards or other incentives (which we refer to collectively as 'emissions limits') to be developed and introduced alongside comprehensive MRV, LDAR and BRVF requirements.

Potential Contributions towards Overall Global Methane Emission Reductions

By introducing a measure limiting methane emissions, the EU could significantly strengthen the incentives for methane emissions reductions throughout the EU fossil energy supply chain. It could do this through a measure, such as industry-specific procurement standards applied to all fossil energy sold in the EU market, that is set to ensure methane emissions reductions align with the EU's climate targets.

The upstream oil and gas industry has indicated that it can achieve methane intensity of 0.2% by 2025. We consider this an appropriate minimum standard that the Commission should adopt, at least initially, along with commensurate midstream and downstream limits.[20]

The EU's opportunity to influence methane emissions from fossil energy should not be underestimated. While LDAR, MRV and bans on methane venting and flaring are all necessary responses to the problem of methane leakage, on their own they are unlikely to deliver the most effective and economically efficient methane reductions. A methane limit measure, in contrast, would allow the EU to establish clear, understandable benchmarks for reducing methane leakage throughout the fossil energy supply chain. These benchmarks should be set to ensure emissions are limited in accordance with the EU's climate targets, while creating strong incentives for local and overseas industries to achieve rapid methane emissions reductions.

Regulation Provides Incentives for Innovation

By introducing an ambitious and early methane emissions limit measure, the EU is also likely to encourage technological innovation and commercialisation to stop methane leakage. Pre-COVID , the International Energy Agency (IEA) estimated that almost half of current methane leakage can be avoided using existing technologies at no additional cost to operators, and yet these solutions are not being widely taken up voluntarily (due to split incentives and other problems identified by the IEA[21] If methane limits are imposed, however, these technologies will be more widely adopted, which will likely in turn bring down their costs and encourage further innovation to improve climate outcomes. This might have a particularly profound impact on reducing emissions from coal mines as currently achieving full emissions reduction is costly and technologically challenging.

In light of these considerations, we urge the Commission to promptly assess options for methane emissions limits (emissions reduction targets, standards or other incentives) alongside the other

measures discussed in this submission, and consult further on this matter in upcoming consultations on methane leakage.

COAL MINE METHANE

So far, coal mine methane has not received enough attention in the Methane Strategy. Ember's research showed that Poland's CMM is responsible for 70% of EU's leaks. The climate impact of this methane is almost twice the CO2 emitted by Bełchatów power plant, Europe's biggest CO2 emitter. We urge the Commission to look at the problem of coal mine methane separately from oil and gas sectors. This is because:

- MRV is already in place in operational mines due to safety measures.
- Closed and abandoned mines also emit significant volumes of methane, although they are not well-researched.
- 50% of leaks in Poland's coal mines occur at coal mines producing coking coal that is used for steel-making e.g. by wind industry, and therefore is unlikely to be phased out soon.
- Quick and cheap wins are achievable (reducing methane emissions from demethanisation stations), but full abatement will require significant upfront investments (abatement of ventilation air methane emissions).

Therefore, we would like to ask the Commission to:

- Include abandoned and unused sites in MRV (section ABANDONED AND UNUSED COAL MINES below).
- Require coal mining companies to present a clear methane abatement strategy with deadlines and targets for methane emissions reduction.
- Set emission standards for coal across the entire supply chain. EU is a big importer of coking coal and will be for some time. It is a key step to stimulate MRV and coal abatement outside of the EU. This could be done with certification schemes developed, for example, for oil and gas.

ABANDONED AND UNUSED COAL MINES

At the moment, the majority of closed and abandoned sites lack appropriate measuring apparatus despite leaking a significant volume of methane. We urge the commission to impose a requirement for the EU member states to report methane emissions from both closed sites and abandoned mines, where no existing owner is liable (and therefore company-level monitoring would not apply).

We would also like to suggest lowering the threshold for reporting from 200T/year to 50T/year to reduce the likelihood of bypassing emissions reporting by, for example, employing different assignment of ventilation shafts.

In terms of LDAR, we acknowledge that capturing methane emissions from closed or abandoned sites may require significant investments. Therefore, financial incentives must be provided to seal legacy mines and/or employ projects to capture methane emissions post-mining.

ABANDONED AND UNUSED OIL AND GAS WELLS

The IIA opens the door to requiring reporting of emissions, monitoring, and verification for closed or abandoned oil and gas wells. Due to its different nature and diversity in ways that wells are decommissioned the Commission needs to recognize these sources of emissions in a suitable manner than what is currently done for the operating sources. Abandoned wells may not have a company that is legally responsible for them, and records on ownership may not provide a legal

remedy for this situation. Thus, the requirement to monitor, report, and verify an abandoned well won't reside with any incorporated entity or individual. Abandoned wells should be addressed, both for MRV as well as for emission mitigation, through a separate program designed to address both wells where ownership is known and where it is unknown. For wells where there is no identifiable liable entity or person, the Commission should find mechanisms to provide funding for capping wells and monitoring them over time. For wells where ownership is known a requirement for remediation and monitoring can be developed. Numerous abandoned wells exist throughout Europe and finding, sealing, and monitoring them can provide substantial reductions in methane emissions as well as employment opportunities in the remediation and monitoring of the wells. A number of programs around the world can provide examples for the technical requirements around remediation, however many of these programs are funded through bonding requirements for the drilling of new wells. In the case of Europe, the Commission would need to explore programs that are funded directly by the government. In Canada, as part of the COVID 19 economic recovery efforts the federal government is infusing $1.7 billion (Canadian) to help clean up abandoned and orphaned wells and to provide employment opportunities.

FEEDSTOCKS

Feedstocks should be comprehensively addressed in the proposed legislative act, which can be achieved in two ways. **First**, in addition to requiring LDAR on fossil gas infrastructure for feedstock uses, which the Methane Strategy commits to do, the Commission should also subject feedstock uses to MRV and any other measures it proposes to reduce methane emissions. **Second**, fossil gas comprises dry gas (*i.e.,* methane) and wet gas (*e.g.,* natural gas liquids such as ethane, propane and butane) – with both being used as feedstocks. For example, methane is a feedstock for agricultural chemicals and methanol and natural gas liquids are petrochemical feedstocks for petrochemicals used to produce plastics, among other things. The definition of feedstocks should therefore include both main constituents of fossil gas—*i.e.,* methane and natural gas liquids—and consideration should also be given to including naphtha derived from oil, another petrochemical feedstock that contributes to methane emissions.

For more information

Tim Grabiel
Senior Lawyer
Environmental Investigation Agency (EIA)
timgrabiel@eia-international.org
+33 6 32 76 77 04

Poppy Kalesi
Director, Global Energy
Environmental Defense Fund
pkalesi@edf.org
+4794822913

Ricarda Dubbert
Project manager
Deutsche Umwelthilfe (DUH)
dubbert@duh.de
+49 30 2400867-966

Jonathan Banks
International Director, Methane
Clean Air Task Force
jbanks@catf.us
+12076070606

Charlotte Hanson
Lawyer (Australian qualified)
ClientEarth
Chanson@ClientEarth
+44 7541 431 308

Małgorzata Kasprzak
Coal Mine Methane analyst
Ember
megan@ember-climate.org
+48 518 273 983

[1] European Commission (22 December 2020). *Inception Impact Assessment: Proposal for a Legislative Act to Reduce Methane Emissions in the Oil, Gas and Coal Sectors*. Page 2. Available here.

[2] Case C-300/89 *Commission v Council "Titanium dioxide"*, Paragraph 10.

[3] Case C-187/93 *Parliament v Council*, Paragraph 28; Case C-411/06 *Commission v Parliament and Council,* Paragraph 77; Case C-81/13 *United Kingdom v Council*, Paragraph 36.

[4] European Commission (22 December 2020). *Inception Impact Assessment: Proposal for a Legislative Act to Reduce Methane Emissions in the Oil, Gas and Coal Sectors*. Page 3. Available here.

[5] Case C-178/03 *Commission v Parliament and Council, Paragraph 42;* Case C-155/07 *Parliament v Council, Paragraph 35.*

[6] European Commission (22 December 2020). *Inception Impact Assessment: Proposal for a Legislative Act to Reduce Methane Emissions in the Oil, Gas and Coal Sectors*. Page 3. Available here.

[7] CO 2014 Cost Benefit Analysis. Tables 21 and 22.

[8] EPA (2016) *Background Technical Support Document for the Final New Source Performance Standards 40 CFR Part 60, subpart OOOOa,* p. 41 (*available at* https://www.regulations.gov/document?D=EPA-HQ-OAR-2010-0505-7631).

[9] A.P. Ravikumar et al. (2020). Single-blind inter-comparison of methane detection technologies – results from the Stanford/EDF Mobile Monitoring Challenge. Elem. Sci. Anth. 7 37. LINK

[10] EPA New Source Rules (NSPS Subpart OOOOa): See 40 CFR §60.5398a.
https://www.law.cornell.edu/cfr/text/40/60.5398a
Colorado Regulations: See 5 Colo. Code Regs. §§ 1001-9 D.I.L.8.
https://drive.google.com/file/d/16qTQLSTX1T49DYWp3voXRNl4_g-vbhQT/view?usp=sharing
Canada: See Regulations Respecting Reduction in the Release of Methane and Certain Volatile Organic Compounds (Upstream Oil and Gas Sector), SOR/2018-66 (Can.) at 29(2), 35(1). https://laws-lois.justice.gc.ca/PDF/SOR-2018-66.pdf
Pennsylvania: See Penna. Dept. of Enviro. Prot., General Permit GP-5A, § G.1.b.
http://www.depgreenport.state.pa.us/elibrary/GetFolder?FolderID=36120

[11] For example, see: Center for Advanced Natural Gas Emissions Technology (CANGET) at Colorado State University. https://energy.colostate.edu/media/sites/147/2018/06/CANGET-White-Paper.pdf
T.A. Fox *et al*. (2019), "A review of close-range and screening technologies for mitigating fugitive methane emissions in upstream oil and gas" *Environ. Res. Lett.,* **14** (053002). https://doi.org/10.1088/1748-9326/ab0cc3

[12] "Critical component" means any component that would require the shutdown of a critical process unit if that component was shutdown or disabled. "Critical process unit" means a process unit or group of components that must remain in service because of its importance to the overall process that requires it to continue to operate, and has no equivalent equipment to replace it or cannot be bypassed, and it is technically infeasible to repair leaks from that process unit without shutting it down and opening the process unit to the atmosphere.

[13] European Commission (14 October 2020). Communication from the Commission on an EU Strategy to Reduce Methane Emissions. Page 9. Available here.

[14] European Commission (14 October 2020). Communication from the Commission on an EU Strategy to Reduce Methane Emissions. Page 10. Available here.

[15] European Commission (14 October 2020). Communication from the Commission on an EU Strategy to Reduce Methane Emissions. Page 10. Available here.

[16] https://www.worldbank.org/en/news/press-release/2020/07/21/global-gas-flaring-jumps-to-levels-last-seen-in-2009

[17] Norwegian Petroleum Directorate. *Regulations relating to Measurement of Petroleum for Fiscal Purposes and for Calculation of CO_2-tax (the Measurement Regulations)* (1 November 2001). Available here.

[18] Norwegian Petroleum Directorate. *Regulations to Act Relating to Petroleum Activities*. Available here.

[19] Page 10, and page 20 at paragraph 21.

[20] This is analogous to sectoral benchmarks for the EU ETS, whereby benchmarks values are calculated and applied based on the performance of the 10% most efficient installations in the EU.

[21] International Energy Agency (2017) available at: https://www.iea.org/commentaries/the-environmental-case-for-natural-gas.