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Subject: Proposal for a REGULATION OF THE EUROPEAN PARLIAMENT AND
OF THE COUNCIL on methane emissions reduction in the energy sector
and amending Regulation (EU) 2019/942
- Analysis of the final compromise text with a view to agreement

I. INTRODUCTION

1. On 15 December 2021, the Commission published a proposal for a Regulation on methane emissions reduction in the energy sector. The proposal is part of the Fit for 55 package and represents an important component of the European Green Deal. It also follows the EU international commitments under the Global Methane Pledge to tackle global methane emissions.
2. The regulation introduces new requirements for the oil, gas and coal sectors to measure, report and verify methane emissions, and proposes strict rules to detect and repair methane leaks and to limit venting and flaring. It also puts forward global monitoring tools and contractual obligations concerning methane emissions from imports of oil, gas and coal into the EU.

3. The Council's general approach was adopted on 19 December 2022. On 9 May 2023 the European Parliament adopted its negotiation mandate. In the European Parliament, the proposal has been referred to both, the Committee on Environment, Public Health and Food Safety (ENVI) and the Committee on Industry, Research and Energy (ITRE). The Committees appointed two co-rapporteurs: MEP Jutta Paulus (Greens/EFA) and MEP Pascal Canfin (ENVI Chair, Renew Europe).
4. Three trilogues took place, on 30 August, 10 October, and 14 November 2023. All along this period, technical meetings were also held. Coreper also discussed and provided mandates for negotiations. The Presidency kept delegations regularly updated on progress made at political and technical level. During the last trilogue a provisional agreement was reached between the co-legislators, as informed in Coreper on 17 November 2023, resulting in the final compromise text as set out in the annex to this note.

II. MAIN ELEMENTS OF THE FINAL COMPROMISE TEXTS

On the key political and legal issues, the Parliament and the Council provisionally agreed on the following elements:

1. The legal basis has been changed to Article 192 TFEU, as the text is focused on environmental protection and given the content and the objectives of the regulation. According to its aim and content, the Regulation is concerned with a reduction in methane emissions in the energy sector across the Union with the aim to limit its impact on climate, in particular in the context of the Union's climate neutrality target.
2. In Article 1 and Article 1a, on the scope or the regulation, the European Parliament's requests for an extension to the petrochemical sector and the introduction of national binding methane emission reduction targets have not been accommodated. These two points are not in the Regulation.
3. In Article 2, definitions have been clarified in line with the agreed text, and new definitions have been introduced, such as those for component, site, quantification, type 1 and type 2 leak detection and repair survey, destruction and removal efficiency, permanently plugged and abandoned well, temporarily plugged well, alternative use of an abandoned coal mine, producer, exporter, methane intensity performance profile, super emitting event and reconciliation process.

4. **Article 6, on inspections**, foresees routine inspections to operators and mine operators and non-routine inspections to operators, mine operators and importers. The first routine inspection shall be completed by 21 months after the date of entry into force of the regulation. Subsequently, competent authorities shall draw up programmes for routine inspections based on a risk assessment, with a period between routine inspections no longer than three years.
5. **In Article 12, on monitoring and reporting**, operators should be required to deliver quantification of their source-level methane emissions within 18 months for operated assets and within 30 months for non-operated assets complemented by site level measurement of their emissions within 30 months for operated assets and within 48 months for non-operating assets. In the case of statistically significant discrepancies between the source-level quantification and the site-level measurement of methane emissions, operators shall carry out a reconciliation process.
6. Regarding **Article 14 on leak detection and repair (LDAR)**, the Parliament agreed on the risk based approach, drawing a distinction between type 1 and type 2 surveys, based on minimum detection limits and minimum leak thresholds. Operators shall submit a leak detection and repair programme to the competent authorities by 9 months from the date of entry into force of the Regulation for existing sites, and by 6 months from the date of start of operations for new sites. Frequencies are detailed in Part 1 of Annex 1, with lower frequencies for the gas transmission and distribution network materials. Different survey frequencies may be applied for efficient operators producing or processing natural gas or oil. By 12 months, the Commission should, by means of an implementing act, specify minimum detection limits of the detection devices. Repair or replacement of components needs to take place immediately after detection of a leak over the threshold, or as soon as possible for a first attempt, but no later than 5 days and 30 days for a complete repair. For leaks under a given threshold there is no repair obligation, but they need to be checked. Advanced technologies could be used as part of the leak detection and repair surveys under certain criteria. An exemption for offshore oil and gas wells located at a depth greater than 700 meters has been granted, if robust evidence can be provided that the impact on the climate of potential emissions from those components is highly likely to be negligible.

7. **In Article 18 on wells,** an inventory is required for inactive wells, temporarily plugged wells and permanently plugged and abandoned wells. Proof of no methane emissions should be produced for wells permanently plugged and abandoned with a cut-off period of 30 years, and where available, for those wells plugged or abandoned more years. The exemptions are preserved for Member States with more than 40.000 wells and for offshore oil and gas wells located at a high water depth.
8. **For closed or abandoned underground coal mines (Section III of Chapter 4),** a cut-off period of 70 years is introduced and an exemption for coal mines that have been fully flooded for more than 10 years.
9. **On imports (Chapter 5),** the compromise text foresees three implementation phases. In a first phase (Article 28, 29 and Annex VIII), the Commission shall set up a methane transparency database for gas, coal and oil placed on the EU market. On the basis of the data collected, the Commission shall publish so called “methane intensity profiles” for Member States, third countries and companies. Additionally, the Commission shall establish a super emitter rapid reaction mechanism. In a second and third phase (Articles 27a and 27b), a progressive set of provisions apply. In particular, as of 1 January 2027, importers shall demonstrate that the contracts concluded or renewed after the entry into force of the Regulation cover solely crude oil, natural gas or coal subject to monitoring, reporting and verification measures, at the level of the producer, equivalent to those set out in the Regulation. For contracts concluded before the entry into force of the Regulation, the principle of undertaking all reasonable efforts in relation to monitoring, reporting and verification applies. The Commission shall issue recommendations containing optional model clauses related to the information to be provided. The Commission should adopt a delegated act setting out a methodology for calculating the methane intensity of companies producing oil, gas and coal placed in the Union market.

10. **In Article 30**, Member States shall lay down the rules on penalties and shall take all measures necessary to ensure that they are implemented. Penalties must be effective, proportionate and dissuasive and shall include fines proportionate to the environmental damage and impact on human safety and public health. Periodic penalties are also foreseen to ensure operators put an end to the infringement. Member States shall ensure that the competent authorities have the power to impose administrative penalties and administrative measures relating to breaches of the imports provisions and of the corresponding provisions applicable at EU level. Member States shall notify the rules on penalties to the Commission by 12 months from the date of entry into force of the Regulation.
11. **In Article 33, on the review clause**, Commission should submit by 1 January 2028, and every 5 years thereafter, a report to the Council and the Parliament on the application of the Regulation. The Commission, where appropriate, shall submit a legislative proposal together with its report, taking into account the relevant Union legislation in related fields.

III. CONCLUSION

1. The Permanent Representatives Committee is invited to:
 - a) confirm the agreement on the final compromise text as set out in Annex I to this note, in view of reaching an agreement at first reading with the European Parliament;
 - b) authorise the Presidency to inform the European Parliament that, should the European Parliament adopt its position at first reading, in accordance with Article 294 paragraph 3 of the Treaty, in the form set out in the text contained in Annex I to this note (subject to revision by the legal linguists of both institutions), the Council will, in accordance with Article 294, paragraph 4 of the Treaty, approve the European Parliament's position at first reading and the act shall be adopted in the wording which corresponds to the European Parliament's position.

2021/0423(COD)

Proposal for a

REGULATION OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL

on methane emissions reduction in the energy sector and amending Regulation (EU) 2019/942

(Text with EEA relevance)

THE EUROPEAN PARLIAMENT AND THE COUNCIL OF THE EUROPEAN UNION,

Having regard to the Treaty on the Functioning of the European Union, and in particular Article 192(1) thereof,

Having regard to the proposal from the European Commission,

After transmission of the draft legislative act to the national parliaments,

Having regard to the opinion of the European Economic and Social Committee¹,

Having regard to the opinion of the Committee of the Regions²,

Acting in accordance with the ordinary legislative procedure,

Whereas:

¹ OJ C , , p. . to be completed

² OJ C , , p. . to be completed

- (1) Methane is second only to carbon dioxide in its overall contribution to climate change and is responsible for approximately a third of current warming. The Intergovernmental Panel on Climate Change (IPCC) published in its Sixth Assessment Report the finding that deep reductions in anthropogenic methane emissions are needed by 2030 to stay below 1,5 ° C.
- (2) Although methane has a shorter average atmospheric residence time (10 to 12 years) than carbon dioxide (hundreds of years), its greenhouse effect on the climate is over 80 times more significant than carbon dioxide (CO₂) over a 20-year period according to the IPCC³. The amount of methane in the atmosphere globally has risen sharply over the last decade.
- (2a) Methane is a precursor gas for harmful ground-level ozone and contributes to air pollution.⁴ Tackling methane emissions will address not only environment and climate but also improve protection of the health.
- (3) According to recent estimates by the United Nations Environment Programme and the Climate and Clean Air Coalition, methane emission reductions of 45% by 2030, based on available targeted measures and additional measures in line with the United Nations ('UN') priority development goals, could avoid 0.3°C of global warming by 2045.
- (4) According to the International Energy Agency world energy balances, the Union is the world's largest importer of fossil energy, and as such an important driver of global methane emissions.

³ According to IPCC, on a 100-year timescale, methane has 29.8 times greater global warming potential than carbon dioxide and is 82.5 times more potent on a 20-year timescale. IPCC Sixth Assessment Report (AR6, Table 7.15 at https://www.ipcc.ch/report/ar6/wg1/downloads/report/IPCC_AR6_WGI_FullReport.pdf)

⁴ European Environment Agency, Air quality in Europe – 2020 report, EEA Report No 9/2020;

- (5) The European Green Deal combines a comprehensive set of mutually reinforcing measures and initiatives aimed at achieving climate neutrality in the Union by 2050 at the latest. The European Green Deal Communication⁵ indicates that the decarbonisation of the gas sector will be facilitated, including by addressing the issue of energy-related methane emissions. The Commission adopted an EU strategy to reduce methane emissions ('the Methane Strategy') in October 2020 setting out measures to cut methane emissions in the EU, including in the energy sector, and internationally. In Regulation (EU) 2021/1119⁶ ('European Climate Law'), the Union has enshrined into legislation the target of economy-wide climate neutrality by 2050 at the latest and also established a binding Union domestic reduction commitment of net greenhouse gas emissions (emissions after deduction of removals) of at least 55% below 1990 levels by 2030. According to the impact assessment accompanying the proposal for this Regulation⁷, under the assumptions of the preferred policy option for the methane legislative proposal combined with the assumptions of the Fit for 55 package, 77% of oil, gas and coal methane emissions projected for 2030 can be abated cost effectively from a social and environmental perspective. This will contribute positively to limiting global warming to 1.5°C and would allow the Union to effectively take the lead in fighting methane emissions and strengthening energy security.

⁵ COM(2019) 640 final.

⁶ Regulation (EU) 2021/1119 of the European Parliament and of the Council of 30 June 2021 establishing the framework for achieving climate neutrality and amending Regulations (EC) No 401/2009 and (EU) 2018/1999 ('European Climate Law') (OJ L 243, 9.7.2021).

⁷ Commission staff working document impact assessment report - Accompanying the proposal for a regulation of the European Parliament and of the Council on methane emissions reduction in the energy sector and amending Regulation (EU) 2019/942, SWD(2021)459

- (6) Methane emissions are included in the scope of the Union greenhouse gas reduction targets for 2030 set out in the European Climate Law and the binding national emission reduction targets under Regulation (EU) 2018/842⁸. However, there is currently no Union level legal framework setting out specific measures for the reduction of anthropogenic methane emissions in the energy sector. In addition, whilst Directive 2010/75⁹ on industrial emissions covers methane emissions from the refining of mineral oil and gas, it does not cover other activities in the energy sector.
- (7) In this context, this Regulation should apply to the reduction of methane emissions in oil and fossil gas upstream exploration and production, including inactive wells, temporarily plugged wells and permanently plugged and abandoned wells, fossil gas gathering and processing, gas transmission, distribution, underground storage and liquefied natural gas terminals, as well as to operating underground and surface coal mines, closed underground coal mines and abandoned underground coal mines.
- (8) Rules for accurate measurement, monitoring, reporting and verification of methane emissions in the oil, gas and coal sectors, as well as for the abatement of those emissions, including through leak detection and repair surveys and restrictions on venting and flaring, while ensuring the protection of workers from methane emissions, should be addressed by an appropriate Union legal framework. The rules laid down in this Regulation should enhance transparency with regard to fossil energy imports into the Union and contribute towards wider uptake of methane emissions mitigation solutions across the globe. A 20-year and a 100-year time horizon for global warming potential should be used.

⁸ Regulation (EU) 2018/842 of the European Parliament and of the Council of 30 May 2018 on binding annual greenhouse gas emission reductions by Member States from 2021 to 2030 contributing to climate action to meet commitments under the Paris Agreement and amending Regulation (EU) No 525/2013 (OJ L 156, 19.6.2018).

⁹ Directive 2010/75/EU of the European Parliament and of the Council of 24 November 2010 on industrial emissions (integrated pollution prevention and control) (OJ L 334, 17.12.2010).

- (9) Compliance with the obligations under this Regulation is likely to require investments by regulated operators and the costs associated with such investments should be taken into account in tariff setting, subject to efficiency principles. The necessary costs should not result in a disproportionate financial burden on end users and consumers.
- (10) Each Member State should appoint at least one competent authority to oversee that operators effectively comply with the obligations laid down in this Regulation and should notify the Commission about such appointment and any changes thereof. The competent authorities appointed should be provided with sufficient financial and human resources and should take all the necessary measures to ensure compliance with this Regulation in accordance with the tasks specifically attributed to them therein. The competent authorities should establish a contact point. Taking into account the cross-border character of energy sector operations and methane emissions, competent authorities should cooperate with each other and the Commission. In this context, the Commission and the competent authorities of the Member States should form together a network of public authorities applying this Regulation to foster close cooperation, with the necessary arrangements for exchanging information and best practices and allow for consultations.
- (11) In order to ensure a smooth and effective implementation of the obligations laid down in this Regulation, the Commission supports Member States through the Technical Support Instrument¹⁰ providing tailor-made technical expertise to design and implement reforms, including those promoting the reduction of methane emissions in the energy sector. The technical support, for example, involves strengthening of administrative capacity, harmonising the legislative frameworks and sharing of relevant best practices.
- (12) In order to ensure the performance of their tasks, operators should provide the competent authorities with all assistance necessary. In addition, operators should take all the necessary actions identified by the competent authorities within the period determined by the competent authorities or any other period agreed with the competent authorities.

¹⁰ Regulation (EU) 2021/240 of the European Parliament and of the Council of 10 February 2021 establishing a Technical Support Instrument (OJ L 57, 18.2.2021).

- (13) One of the main mechanism available to the competent authorities should be inspections, including examination of documentation and records, emissions measurements and site checks. Inspections should take place regularly, on the basis of an appraisal of the risks associated with each site, such as environmental risks, conducted by the competent authorities. Already established controlling mechanisms and best practice examples available to the competent authorities should be taken into account. In addition, inspections should be carried out to investigate substantiated complaints and occurrences of non-compliance and to ensure that repairs or replacements of components and mitigation measures are carried out in accordance with this Regulation, as well as to regularly check compliance of importers with this Regulation. Where they identify a serious breach of the requirements of this Regulation, competent authorities should issue a notice of remedial actions to be taken by the operator or mine operator. Alternatively, the competent authorities may decide to instruct the operator, or mine operator or importer to submit to their approval a set of remedial actions to address the breaches. Competent authorities should keep records of the inspections and the relevant information should be made available in accordance with Directive 2003/4/EC of the European Parliament and of the Council¹¹.
- (13a) In order for competent authorities to determine the seriousness of a breach of this Regulation, it is relevant to consider the environmental damage and the impact on human safety and public health of the methane leak or venting or flaring event, as well as the likelihood of the breach to affect to a significant degree data reliability and robustness in the monitoring and reporting obligations under this Regulation.

¹¹ Directive 2003/4/EC of the European Parliament and of the Council of 28 January 2003 on public access to environmental information and repealing Council Directive 90/313/EEC (OJ L 41, 14.2.2003).

- (14) In light of the proximity of some methane emission sources to urban or residential areas and their impact on health, environment and climate, natural or legal persons should be able to lodge duly substantiated complaints with the competent authorities of possible breaches of this Regulation. In this context, it should be possible to use the European e-Justice Portal to host relevant information, as made available by Member States, notably on the contact details of their competent authorities, the most important steps of the complaint proceedings, as well as the rights and basic rules to follow. Complainants should be kept informed of the procedure and decisions taken and should receive a final decision within a reasonable time of lodging the complaint.
- (15) A robust verification framework improves the credibility of reported data. In addition, the level of detail and technical complexity of methane emissions measurements requires proper verification of methane emissions data reported by operators and mine operators. While self-verification is possible, third party verification ensures greater independence and transparency. In addition, it allows for a harmonized set of competences and level of expertise that may not be available to all public entities. Verifiers should be accredited by accreditation bodies in accordance with Regulation (EC) 765/2008 of the European Parliament and of the Council¹² or otherwise authorised in a manner comparable to Regulation (EC) 765/2008. Independent verifiers should thus ensure that emissions reports prepared by operators, undertakings, importers and mine operators are correct and in compliance with the requirements set out in this Regulation. The verification activities should be aligned with European or international standards and methodologies and taking due account of the nature of the operator's activities. The verifiers should review the data in the emissions reports to assess their reliability, credibility and accuracy. To ensure the accuracy of the data, verifiers should conduct, where relevant, announced and unannounced site checks. Verifiers are separate from competent authorities and should be independent from the operators, undertakings, importers and mine operators, who should provide them with all assistance necessary to enable or facilitate the performance of the verification activities, notably as regards access to the premises and the presentation of documentation or records.

¹² Regulation (EC) No 765/2008 of the European Parliament and of the Council of 9 July 2008 setting out the requirements for accreditation and market surveillance relating to the marketing of products and repealing Regulation (EEC) No 339/93 (OJ L 218, 13.8.2008).

- (16) In performing their obligations and exercising their powers under this Regulation, verifiers, the competent authorities and the Commission should consider the information made available internationally, for example by the International Methane Emissions Observatory (IMEO), in particular with regards to methodologies for data aggregation and analysis and verification of methodologies and statistical processes employed by operators, undertakings, importers and mine operators to quantify their emissions reported data. The reference criteria in that respect may include the Oil and Gas Methane Partnership (OGMP) reporting framework, templates and guidance documents.
- (17) The IMEO was set up in October 2020 by the Union in partnership with the United Nations Environmental Programme, the Climate and Clean Air Coalition and the International Energy Agency, and launched at the G20 Summit in October 2021. The IMEO has been tasked with collecting, reconciling, verifying and publishing anthropogenic methane emissions data at a global level. The IMEO could play a role in identifying super emitters by way of an early detection and warning system.
- (18) As party to the United Nations Framework Convention on Climate Change (UNFCCC) and the Paris Agreement, the Union is required to provide annually an inventory report of anthropogenic greenhouse gas emissions constituting an aggregate of the member States national greenhouse gas inventories, prepared using good practice methodologies accepted by the Intergovernmental Panel on Climate Change (IPCC).
- (19) Regulation (EU) 2018/1999 of the European Parliament and of the Council¹³ requires Member States to report greenhouse gas inventory data to the Commission and to report their national projections. Pursuant to Article 17(2) of Regulation (EU) 2018/1999 reporting is to be undertaken using UNFCCC reporting guidelines, and is often based on default emission factors rather than direct source-level measurements, implying uncertainties on the origin, frequency and magnitude of emissions.

¹³ Regulation (EU) 2018/1999 of the European Parliament and of the Council of 11 December 2018 on the Governance of the Energy Union and Climate Action, amending Regulations (EC) No 663/2009 and (EC) No 715/2009 of the European Parliament and of the Council, Directives 94/22/EC, 98/70/EC, 2009/31/EC, 2009/73/EC, 2010/31/EU, 2012/27/EU and 2013/30/EU of the European Parliament and of the Council, Council Directives 2009/119/EC and (EU) 2015/652 and repealing Regulation (EU) No 525/2013 of the European Parliament and of the Council (OJ L 328, 21.12.2018, p. 1).

- (20) Country data reported pursuant to UNFCCC reporting provisions is submitted to the UNFCCC secretariat according to different tiers of reporting in line with the IPCC guidelines. In this context, the IPCC generally suggests using higher tier methods for those emission sources which have a significant influence on a country's total inventory of greenhouse gases in terms of absolute level, trend or uncertainty.
- (21) A tier represents a level of methodological complexity. Three tiers are available. Tier 1 methods typically use IPCC default emission factors and require the most basic, and least disaggregated, activity data. Higher tiers usually utilise more elaborate methods and source-specific, technology-specific, region-specific or country-specific emission factors, which are often based on measurements, and normally require more highly disaggregated activity data. Specifically, tier 2 requires country-specific, instead of default, emission factors to be used, while tier 3 requires plant-by-plant data or measurements and comprises the application of a rigorous bottom-up assessment by source type at the individual facility level. Progressing from tier 1 to tier 3 represents an increase in the certainty of measurements of methane-related emissions¹⁴.
- (22) Member States have different practices as concerns the tier level at which they report their energy related methane emissions to the UNFCCC. Reporting at tier 2 for large emission sources is in line with IPCC reporting guidelines as tier 2 is considered a higher tier method. Consequently, estimation methodologies and reporting of energy related methane emissions varies across Member States, and reporting at the lowest, tier 1, level is still very common in several Member States for methane emissions from coal, gas and oil.

¹⁴ IPCC (2019) 2019 Refinement to the 2006 IPCC guidelines for national greenhouse gas inventories.

- (23) Currently, voluntary industry-led initiatives remain the principal course of action for methane emissions quantification and mitigation in many countries. A key energy sector led initiative is the Oil and Gas Methane Partnership ('OGMP'), a voluntary initiative on measuring and reporting of methane emissions created in 2014 by the United Nations Environmental Programme (UNEP) and the Climate and Clean Air Coalition (CCAC), in whose board the Commission is represented. The OGMP focuses on establishing best-practices to improve the availability of global information on methane emissions quantification and management and to drive mitigation actions to reduce methane emissions. To date over 115 companies, with assets in more than 60 countries on five continents, representing over 35% of the world's oil and gas production and over 70% of liquefied natural gas flows have signed up to OGMP 2.0. The OGMP's work on developing standards and methodologies involves governments, civil society and business. The OGMP 2.0 framework is the latest iteration of a dynamic methane emissions standard and it can provide a suitable basis for methane emissions standards, based on sound scientific norms.
- (24) Against this background, it is necessary to improve the measurement and quality of reported data of methane emissions, including on the main sources of methane emissions associated with energy produced and consumed within the Union. Moreover, the availability of source-level data and robust quantification of emissions should be ensured, thereby increasing the reliability of reporting as well as the scope for appropriate measures for mitigation.
- (25) For quantification and reporting to be effective, oil, gas and coal operators and undertakings should be required to quantify and report methane emissions by source, and to make aggregated data available to Member States in order for Member States to be able to improve the accuracy of their inventories reporting. In addition, effective verification of company reported data is necessary and, to minimise the administrative burden for operators, reporting should be organised on an annual basis.
- (26) This Regulation builds on the OGMP 2.0 framework insofar as it meets the criteria referred to in Recitals 24 and 25, to contribute towards the collection of reliable and robust data that would form a sufficient basis for monitoring methane emissions and if necessary to build additional action to further curb methane emissions.

- (27) The OGMP 2.0 framework has five levels of reporting. Source-level reporting begins at level 3, which is considered comparable with UNFCCC tier 3. It allows generic emission factors to be used. OGMP 2.0 level 4 reporting requires direct measurements of source-level methane emissions. It allows the use of specific emission factors. OGMP 2.0 level 5 reporting requires the addition of complementary site-level measurements. In addition, the OGMP 2.0 framework requires companies to report direct measurements of methane emissions within three years of joining OGMP 2.0 for operated assets and within five years for non-operated assets. Building on the approach taken in OGMP 2.0 with regard to source-level reporting and taking into account that a large number of Union companies had already signed up to OGMP 2.0 in 2021. Union operators should submit a report containing quantification of source-level methane emissions within 18 months for operated assets and within 30 months for non-operated assets complemented by site level measurement of their emissions within 30 months for operated assets and within 48 months for non-operating assets. In addition to source level quantification, site-level quantification allows assessment, verification and reconciliation of source-level estimates aggregated by site, thereby providing improved confidence in reported emissions. As in OGMP 2.0, this Regulation requires site-level measurements to reconcile source-level measurements.
- (28) According to data from the Union’s GHG inventory, more than half of all direct energy sector methane emissions is due to unintentional release of emissions into the atmosphere. In the case of oil and gas, that represents the largest share of methane emissions.
- (29) Unintentional leaks of methane into the atmosphere can occur during drilling, extraction as well as during processing, storage, transmission and distribution to end-use consumers. They can also occur in inactive, temporarily plugged and permanently plugged and abandoned oil or gas wells. Some emissions result from imperfections in, or ordinary wear and tear of, technical components such as joints, flanges and valves, or from damaged components, for example in the case of accidents. Corrosion or damage can also cause leaks from the walls of pressurised equipment.
- (30) deleted

- (31) In order to reduce methane emissions, operators should take all appropriate mitigation measures to minimise methane emissions in their operations.
- (32) More specifically, methane emissions from leaks are most commonly reduced by methane leak detection and repair ('LDAR') surveys, carried out first to identify leaks and then to repair leaks or replace leaking components. Operators should therefore conduct periodic LDAR surveys and these should also cover surveying of components that vent methane, to check for malfunctioning equipment.
- (33) For that purpose, a harmonised approach to ensure a level-playing field for all operators in the Union should be set up. That approach should include minimum requirements for LDAR surveys, while leaving an adequate degree of flexibility to Member States and operators. This is essential to allow innovation and the development of new components, LDAR technologies and methods, thus preventing the lock-in of technology, to the detriment of environmental protection. New technologies and detection methods continue to emerge and Member States should encourage innovation in this sector, so that the least emitting, accurate and cost-effective components, LDAR technologies and methods can be adopted.

(34) Obligations on LDAR surveys should reflect a number of good practices. LDAR surveys should be primarily aimed at finding and eliminating as quickly as possible leaks by repair or replacement of the leaking component, rather than quantifying them, and those areas with a higher risk of leaks should be checked more frequently; the frequency of surveys and the decision to repair should be guided not only by the need to repair components from which methane is escaping above the methane emission threshold but also by operational considerations, taking into account risks to safety. Thus, where a higher risk to safety or higher risk of methane losses is identified, the competent authorities should be allowed to recommend a higher frequency of surveys for the relevant components or replace components with a technology that is less prone to leaking; all leaks irrespective of size should be surveyed and checked, as small leaks can develop into larger ones; leak repairs should be followed by confirmation that they have been effective; in order to allow for future, more advanced components or methane emissions detecting technologies to be used, the size of methane loss at or above which a repair is required should be specified, while allowing operators the choice of detection device. Where appropriate, detection technologies such as continuous monitoring may be used as part of leak detection and repair surveys as long as they fulfil the requirements for advanced detection technologies of this Regulation. Best performing operators producing or processing natural gas or oil should be able to use different LDAR survey frequencies, subject to the fulfilment of the conditions in this Regulation and the approval of the competent authorities.

The surveys should be undertaken, using the appropriate available technologies and detection techniques to identify leaks: as close as possible to each individual potential emission source for aboveground and above the sea level components; at the interface between ground and atmosphere as a first step and, in case a potential leak is detected, as close as possible to the emission source as a second step for underground components; and applying the best commercially available detection techniques for offshore components below the sea and below the seabed.

As regards underground components, leak detection and repair surveys are generally undertaken using a two-step process:

- i. The first step consists in undertaking a first leak detection and determines whether or not to dig the ground, or undertake bar-hole drilling if the pipeline is directly accessible. Operators dig or drill the ground if the leak is at or above the first leak detection threshold.
- ii. The second step consists in undertaking a second leak detection and determines whether or not to repair the leak. Operators repair the leak if it is at or above the second leak detection threshold.

Minimum detection limits serve to ensure that the detection devices are sensitive enough to find leaks according to the requirements of this Regulation. These minimum detection limits as well as detection techniques to be employed should be determined in an implementing act, taking into account the different types of components and leak detection and repair surveys, for all categories of components, along with the leak thresholds applicable to the first step of the surveys for underground components.

(34a) Repair or replacement should take place immediately after detection of a leak at or above the repair threshold, or as soon as possible thereafter. Albeit the need to consider exceptional safety, administrative and technical aspects, the necessary evidence to justify any delays in repair should be provided. Repairs or replacements should use best commercially available technologies that provide long-term protection against future leakage.

(34b) deleted

(34c) Small connected systems as defined in Directive (EU) 2019/944 of the European Parliament and of the Council of 5 June 2019 on common rules for the internal market for electricity and amending Directive 2012/27/EU (recast) may face security of supply and grid stability issues in the case of a system shutdown. Therefore, to avoid such risks for the security of supply, repair or replacement works should be carried out when the next shutdown is scheduled.

(35) In light of its potent GHG emission effect, venting should be banned except in the case of emergencies, malfunction or during certain specific events where some venting is unavoidable and strictly necessary. To ensure that operators do not use equipment designed to vent, technology standards should be adopted that allow for the use of lower-emitting alternatives.

- (36) When carried out during the normal production of oil, gas and coal in the absence of sufficient facilities or amenable geology to re-inject the produced gas, utilise it on-site, or dispatch it to a market, flaring is considered as routine flaring. Routine flaring should be banned. Flaring should only be permissible when it is the only alternative to venting and where venting is not prohibited, consequently, where no other choice is available, flaring should always be preferred to venting. Venting is more harmful to the environment than flaring as the released gas typically contains high levels of methane, whereas flaring oxidises methane into carbon dioxide which has a lower global warming potential. The elimination of non-emergency flaring also increases the availability of natural gas for gas markets.
- (37) Using flaring as an alternative to venting requires that flaring devices are efficient at combusting methane. For that reason, a combustion efficiency requirement should also be included for the cases in which flaring is admissible and venting and flaring devices with a design efficiency below 99% should be phased out. Use of auto-igniter or continuous pilot burners, which give more reliable ignition as they are not affected by wind, should also be required.
- (38) Re-injection, utilisation on-site or dispatch of the methane to a market should always be preferable to flaring - and therefore venting - of methane. Operators that vent should provide proof to the competent authorities that neither re-injection, utilisation on-site or dispatch of the methane to a market nor flaring were possible and operators that flare should provide proof to the competent authorities that re-injection, utilisation on-site or dispatch of the methane to a market was not possible.
- (39) Operators should notify major venting and flaring events without delay to the competent authorities and submit annually more comprehensive reports on all venting and flaring events. They should also ensure that equipment and devices comply with the standards laid down in Union law.

- (40) Methane emissions from inactive, temporarily plugged and permanently plugged and abandoned oil and gas wells pose public health, safety and environmental risks. Therefore, monitoring, including quantification and pressure monitoring, where such monitoring equipment exists, and reporting obligations should still apply and those wells and well sites should be permanently plugged, reclaimed and remediated, as applicable. In such cases, Member States should have a predominant role, in particular to establish inventories and, where no responsible party can be identified, to establish mitigation plans within clear deadlines.
- (40a) For permanently plugged and abandoned wells, documentation adequate to demonstrate that there are no methane emissions should be provided for all wells permanently plugged and abandoned from 30 years before the entry into force of the Regulation and, where available, for those earlier than 30 years. Such documentation should include at least emission factor based or sample-based quantification or reliable evidence of permanent subsurface isolation in accordance with ISO 16530-1, the international standard on well integrity for petroleum and natural gas industries.
- (40b) Where the competent authorities are provided with reliable evidence of material methane emissions, confirmed by an independent third party, in an offshore inactive well, a temporarily plugged well or in a permanently plugged and abandoned well, as appropriate, the competent authorities should determine the application of the obligations for temporarily plugged wells to that well.
- (40c) The number of inactive wells, temporarily plugged wells and permanently plugged and abandoned wells located on the territory of the Member States vary significantly, with some Member States having a very high density of these wells on their territories. Those Member States with very high number of wells located on their territory should therefore be allowed to apply a more gradual approach to fulfilling obligations regarding the establishment of inventories to ensure the proportionality of the costs and administrative burden associated with the inventory of these wells.

- (40d) Considering that the potential of methane leakage from offshore wells to reach the surface depends on several factors and tends to decrease with water depth and that the resources necessary to survey and intervene in offshore wells increase with increasing water depth and distance from shore, exemptions from certain obligations under this Regulation should be considered for offshore wells located at greater water depth, if robust evidence can be provided that the impact on the climate of potential methane emissions from those components is highly likely to be negligible.
- (41) EU GHG inventory data shows that coalmine methane emissions are the biggest single source of methane emissions in the Union's energy sector. In 2019, direct emissions from the coal sector represented 31% of methane emissions, almost equal to the percentage of direct methane emissions from fossil gas and oil combined, of 33%.
- (42) Currently, there is no Union-wide specific regulations limiting methane emissions from the coal sector, despite availability of a wide array of mitigation technologies. There is no Union or international coal-specific monitoring, reporting and verification standard. In the Union, reporting of methane emissions from the coal industry is part of the GHG emission reporting by Member States and data from underground mines is also included in the European Pollutant Release and Transfer Register established by Regulation (EC) No 166/2006¹⁵.
- (43) Methane emissions are primarily linked to underground mining activities, both in active and abandoned mines¹⁶. In active underground mines, methane concentration in the air is continuously controlled, as it constitutes a health and safety hazard. In the case of underground coal mines, the vast majority of the methane emissions occur through ventilation and drainage or degasification systems, which represent the two main ways of lowering methane concentrations in a mine's airways.

¹⁵ Regulation (EC) No 166/2006 of the European Parliament and of the Council of 18 January 2006 concerning the establishment of a European Pollutant Release and Transfer Register and amending Council Directives 91/689/EEC and 96/61/EC (OJ L 33, 4.2.2006)

¹⁶ (2020) N. Kholod et al Global methane emissions from coal mining to continue growing even with declining coal production, Journal of Cleaner Production, Volume 256, 120489

(44) Once production is halted and a mine is closed or abandoned, it continues to release methane, referred to as abandoned mine methane (AMM). These emissions typically occur at well-defined point sources, such as ventilation shafts or pressure-relief vents. With increased climate ambition and shifting energy production to less carbon-intensive energy sources, AMM emissions are likely to increase in the Union. It is estimated that even 10 years after mining is ceased, methane from non-flooded mines continues to be emitted at levels attaining approximately 40% of emissions recorded at the time of closure¹⁷. Moreover, treatment of AMM remains fragmented due to different ownership and exploitation rights and obligations across the EU. Member States should thus establish inventories of closed underground coal mines and abandoned underground coal mines where operations have ceased since ... [70 years prior to the date of entry into force of this Regulation] and the identified responsible party, should be required to install devices for measurement of methane emissions.

¹⁷ (2020) N. Kholod et al Global methane emissions from coal mining to continue growing even with declining coal production, Journal of Cleaner Production, Volume 256, 120489

- (45) Operating surface coal mines in the Union produce lignite and emit less methane than underground coal mines. Lignite mines in the EU are predominantly opencast surface mines, with the exception of one lignite underground mine in one Member State. According to the Union GHG inventory, in 2019 operating surface mines emitted 166 kilotonnes compared to 828 kilotonnes for underground coal mines¹⁸. Measurement of surface coal mine methane emissions is challenging due to their diffuse nature over a wide area. Therefore, and despite available technology¹⁹, emissions from surface mines are rarely measured. Methane emissions from surface mines can be derived using basin-specific coal emission factors and, with greater precision, using mine- or deposit-specific emission factors, since coal basins have deposits with different methane-bearing capacity²⁰. Emission factors can be derived from measuring gas content of the seams sampled from exploration borehole cores²¹. Mine operators should thus perform quantification of methane emissions in surface coal mines using such emission factors.
- (45a). The potential of methane emissions from fully flooded underground coal mines tends to decrease significantly over time as the hydrogeological conditions stabilise following the closing of the mine²². Therefore, it should be possible to exempt these mines from the application of quantification obligations, where duly justified.
- (46) Mine operators should perform continuous measurement and quantification of methane emissions from ventilation shafts in underground coal mines, continuous measurement of vented and flared methane in drainage stations and use specific emission factors as regards surface coal mines. They should report that data to the competent authorities.

¹⁸ Methane emissions for the energy sector in Kilotonnes, disaggregated by emission category source, as reported to UNFCCC in April 2021 by EEA on behalf of the EU

¹⁹ Best Practice Guidance for Effective Management of Coal Mine Methane at National Level: Monitoring, Reporting, Verification and Mitigation, ECE Energy Series No. 71, UNECE 2021 (Forthcoming)

²⁰ 2006 IPCC guidelines for national greenhouse gas inventories.

²¹ Best Practice Guidance for Effective Management of Coal Mine Methane at National Level: Monitoring, Reporting, Verification and Mitigation, ECE Energy Series No. 71, UNECE 2021, December 2021

²² (2020) N. Kholod et al Global methane emissions from coal mining to continue growing even with declining coal production, Journal of Cleaner Production, Volume 256, 120489

- (47) Currently, mitigation of methane emissions can be best achieved in operating and closed underground coal mines or abandoned underground coal mines. Effective mitigation of methane emissions from operating and closed or abandoned surface mines is currently limited by technology. However, in order to support research and development on mitigation technologies of such emissions in the future, there should be effective and detailed monitoring, reporting, and verification of the scale of those emissions.
- (48) Operating underground mines are either thermal or coking coal mines. Thermal coal is used primarily as an energy source and coking coal is used as a fuel and as a reactant in the process of steelmaking. Both coking coal and thermal coal mines should be subject to measuring, reporting and verification and mitigation measures of methane emissions. Mitigation of methane emissions should be implemented through a phase out of venting and flaring. Mitigation measures should not lead to the deterioration of the safety of workers.
- (49) For operating underground coal mines, mitigation of methane emissions should be implemented through a phase out of venting and flaring devices with a design efficiency of less than 99%. For closed or abandoned underground coal mines, while flooding the mine can prevent methane emissions, this is not systematically done and has environmental risks. Venting and flaring devices with a design efficiency below 99% in these mines should also be phased out. As geological constraints and environmental considerations prevent a one-size-fits-all approach to mitigate methane emissions from abandoned underground coal mines²³, Member States should establish their own mitigation plan, taking into consideration those constraints and the technical feasibility of AMM mitigation.
- (49a) In order to decrease methane emissions from operating coal mines, Member States should be allowed to consider systems of incentives for the reduction of emission of methane, subject to compliance with State aid rules. Those systems may in particular incentivise investments into methane capture and injection to the grid, decrease of methane emission from ventilations shafts and from flaring. Member States may consider dedicated systems of fees and charges to facilitate investments into methane reductions inter alia as part of State aid programmes aimed at the decommissioning of coal production capacities, subject to compliance with State aid rules.

²³ Best Practice Guidance for Effective Methane Recovery and Use from Abandoned Mines (UNECE, 2019)

- (49aa) Existing best mitigation practices to reduce methane emissions should be allowed in closed coal mines and abandoned coal mines, such as the development of geothermal and heat storage projects in flooded mines, hydropower applications in non-flooded mines, capturing methane by degassing, the use of safety-relevant degassing devices, the use of mine gas as an energy resource, or the impoundment of mine water and other possible uses.
- (50) deleted
- (51) The Union is dependent on imports for 70% of its hard coal consumption, 97% of its oil consumption, and 90% of its fossil gas consumption. While the share of global anthropogenic methane emissions emitted in Europe is estimated to be only around 6%²⁴, the consumption of, and import dependency on, fossil fuels contributes significantly to methane emissions of the Union.
- (52) Global warming effects caused by methane emissions are cross-border. Although some fossil energy producing countries are beginning to act domestically to reduce methane emissions from their energy sectors, many exporters are not subject to any regulations in their respective domestic markets. Such operators need clear incentives to act on their methane emissions, hence transparent information on methane emissions should be made available to the markets.
- (53) Currently there is limited accurate data (UNFCCC Tier 3 or equivalent) on international methane emissions. Many fossil exporting countries have so far not submitted full inventory data to the UNFCCC. At the same time, there is evidence of large increases of methane emissions from oil and gas production activities globally, increasing from 65 to 80 Mt/year in the last 20 years²⁵.

²⁴ Commission Impact Assessment Report Accompanying the Proposal for a Regulation of the European Parliament and of the Council on Methane Emissions Reduction in the Energy Sector: <https://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=SWD:2021:0459:FIN:EN:PDF>

²⁵ Global Assessment of Oil and Gas Methane 1 Ultra-Emitters; T. Lauvaux, C. Giron, M. Mazzolini, A. d'Aspremont, R. Duren, D. Cusworth, D. Shindell, P. Ciais; April 2021.

- (54) As announced in the Communication on the EU Methane Strategy²⁶, the Union is committed to working in cooperation with its energy partners and other key fossil energy importing and exporting countries to tackle methane emissions globally. Energy diplomacy on methane emissions has already yielded important outcomes. In September 2021, the Union and the United States announced the Global Methane Pledge, launched at the UN Climate Change Conference (COP 26) in November 2021. It represents a political commitment to work together in order to collectively reduce global methane emissions by 30% by 2030 (from 2020 levels) and to take comprehensive domestic actions to achieve this target. Over one hundred countries have already committed, representing nearly half of global anthropogenic methane emissions. The Global Methane Pledge includes a commitment to move towards using best available inventory methodologies to quantify methane emissions.
- (55) Furthermore, the International Methane Emissions Observatory (IMEO) will play an important and lead role to increase transparency on global energy sector methane emissions, and the Commission will continue cooperating with the IMEO.
- (56) deleted
- (57) In parallel to continuing its diplomatic work to achieve global commitments for significant methane reductions, the Union is further encouraging all efforts related to significant methane emissions abatement globally, and in particular in the countries supplying fossil energy to the Union.
- (58) Therefore, importers of fossil energy to the Union should be required to provide competent authorities of the Member States with information on measures related to measurement, reporting, verification and mitigation of methane emissions undertaken by exporters, in particular the application of regulatory or voluntary measures to control their methane emissions, including regarding leak detection and repair surveys or measures to control and restrict venting and flaring of methane. The levels of measurement and reporting set out in the information requirements applied to importers correspond to the ones required from Union operators in this Regulation. The information to be provided by the importers on measures taken to control methane emissions is not more burdensome than that required from Union operators.

²⁶ COM(2020) 663 final
2. https://ec.europa.eu/commission/presscorner/detail/en/statement_22_6827

- (59) Member States should communicate that information to the Commission. On the basis of that information, the Union should set up and manage a transparency database which will cover information reported by the Union's undertakings and by importers of fossil energy into the Union. Such a transparency database would serve as a source of information for the purchasing decisions of importers of fossil energy to the Union as well as for other stakeholders and the public. In addition to the transparency database, the Commission should develop methane performance profiles, containing the methane emissions data related to crude oil, natural gas and coal placed on the Union market. The profiles should also include an assessment of the efforts undertaken by companies in the Union and companies exporting fossil energy to the Union to measure and report as well as reduce their methane emissions. They should further include information on the regulatory actions regarding the measurement, reporting and mitigation taken by countries where fossil energy is produced.
- (60) In addition, the Union should put in place a global methane emitter monitoring tool, providing information on the magnitude, recurrence and location of high methane-emitting sources, as well as a rapid reaction mechanism to address super emitting events occurring within or outside the Union. In this regard, the Commission should take into account any information received by Member States or third parties on super emitting events which is duly substantiated. Member States are encouraged to share with the Commission duly substantiated information in their possession on super emitting events. These tools should further encourage real and demonstrable results from the implementation of methane regulations and effective mitigation actions taken by undertakings in the Union and those supplying fossil energy to the Union. They may be based on existing international tools or frameworks and should pool data from several certified data providers and services, including the Copernicus component of the EU Space Programme and the IMEO. The tools should inform the Commission's bilateral dialogues with the countries concerned regarding methane emissions policies and measures.

- (61) Altogether, the methane transparency database, methane performance profiles, the methane emitters global monitoring tool and the rapid reaction mechanism should contribute to enhancing transparency for buyers in the Union, empowering them to make informed supply decisions and improving the possibility of wider uptake of methane mitigation solutions across the globe. In addition, they should further incentivise international undertakings to sign up to international methane measurement and reporting standards such as OGMP or to adopt effective measurement, reporting and mitigation measures.
- (61a) New contracts which Union importers conclude for the supply of crude oil, natural gas or coal should strengthen the take up in third countries of rules to monitor, report and verify methane emissions equivalent to those set out in this Regulation. Rules should be put in place to enable third-country suppliers and Union importers to demonstrate equivalence of such measures, with regard to crude oil, natural gas or coal imported to the Union. While these considerations cannot be imposed on existing contracts, they can be included in new contracts or existing contracts which are in the process of being renewed, even tacitly. In this context, model clauses recommended by the Commission will be a useful guidance instrument for undertakings.
- (61b) Equivalence of monitoring reporting and verification of methane emissions may be achieved not only by measures applied by undertakings, but also at country level, through the legal frameworks in place determining the terms of such monitoring, reporting and verification. The Commission should therefore be empowered to adopt implementing acts to determine the requirements concerning evidence to be provided by third countries in that regard, actively engaging with all exporting countries and having due regard to the different circumstances which may be present in third countries and the Union's obligations under international law. The Commission should also be empowered to establish and revoke equivalence for individual third countries, where appropriate.
- (61c) The Commission should be enabled to propose instruments to reach out to third countries such as dialogues on super-emitting events, monitoring, reporting and verification equivalence decisions and cooperation frameworks to facilitate implementation of the obligations applicable to importers and which may affect third countries and suppliers located on their territory.

- (61ca) Instruments including dialogues on super-emitting events, monitoring, reporting and verification equivalence decisions and the adoption of cooperation frameworks should be envisaged to ensure the proper implementation of the obligations applicable to . producers or exporters established in third countries and supplying crude oil, natural gas or coal to the Union. The adoption of these instruments should be subject to the relevant provisions of the Treaties , where applicable. The Commission should not enter into dialogues with third countries on super-emitting events, should refrain from adopting equivalence decisions and should not recommend the opening of negotiations for a cooperation framework where this would risk circumventing restrictive measures adopted under Article 29 TEU or Article 215 TFEU affecting crude oil, natural gas and coal imports.
- (61d) Once the methane transparency database, the methane performance profiles, the global monitoring tool and the super emitter rapid reaction mechanism are in place, the Commission should set out a methodology for calculating the methane intensity of the production of crude oil, natural gas and coal. The methodology should be made publicly available. The Commission should, on this basis, assess the potential impact of various levels of maximum methane intensity values on security of supply, as well as on the competitiveness of the Union's economy.
- (61e) The Commission should be empowered to determine mandatory maximum methane intensity values and classes associated to the production of crude oil, natural gas and coal placed on the Union market, based on the methodology and assessment referred to above, and which should be set at levels that promote global methane emissions reductions, while preserving security of energy supply at national and Union level, ensuring non-discriminatory treatment and protecting the competitiveness of the Union's economy.

- (61f) To ensure a harmonised approach to implementation and create a common technical language for all actors in the oil, gas and coal sectors, the Commission should consider, in accordance with Regulation (EU) No 1025/2012 of the European Parliament and of the Council, requesting the relevant European standardisation organisations to draft harmonised standards for measurement and quantification of methane emissions in oil, gas and coal, for leak detection and repair surveys and for equipment related with venting and flaring. Those standards should be rendered mandatory for the purpose of application of this Regulation, to ensure a harmonised approach between operators, undertakings and mine operators and compliance actors, notably independent verifiers, the competent authorities and the Commission. Where harmonised standards cannot be delivered or do not ensure compliance with the requirements of this Regulation, the Commission should be empowered to adopt technical prescriptions to cover the necessary requirements. Until such a date when standards or technical prescriptions come into application, operators, undertakings and mine operators should follow state of the art industry practices and best available technologies.
- (62) Member States should ensure that infringements of this Regulation are sanctioned by effective, proportionate and dissuasive penalties, which may include fines and periodic penalty payments, and take all measures necessary to ensure that they are implemented. In order to play a significant deterrent effect, penalties should be adequate to the type of infringement, to the possible advantage for the operator and to the type and gravity of the environmental damage, impact on human safety and public health. When imposing penalties, due regard should be given to the nature, gravity and duration of the infringement in question. The imposition of penalties should be proportionate, non-discriminatory and should comply with Union, international and national law, including with applicable procedural safeguards and with the principles of the Charter of fundamental rights.

- (63) In order to ensure more consistency, a list of the types of infringements that should be subject to penalties should be set out. In order to facilitate the more consistent application of penalties, common non-exhaustive and indicative criteria for the application of penalties should be set out. The deterrent effect of penalties should be reinforced by the possibility to publish the information related to the penalties imposed by Member States subject to compliance with Union law on the protection of personal data²⁷ where the penalties are imposed on natural persons.
- (64) As a result of the provisions requiring investments by regulated operators to be taken into account in tariff setting, Regulation (EU) 2019/942 of the European Parliament and of the Council²⁸ should be amended to entrust ACER with the task of making available a set of indicators and reference values for the comparison of unit investment costs linked to measurement, quantification, monitoring, reporting, verification and abatement of methane emissions for comparable projects.

²⁷ Regulation (EU) 2018/1725 of the European Parliament and of the Council of 23 October 2018 on the protection of natural persons with regard to the processing of personal data by the Union institutions, bodies, offices and agencies and on the free movement of such data, and repealing Regulation (EC) No 45/2001 and Decision No 1247/2002/EC (OJ L 295, 21.11.2018, p. 39).

²⁸ Regulation (EU) 2019/942 of the European Parliament and of the Council of 5 June 2019 establishing a European Union Agency for the Cooperation of Energy Regulators (OJ L 158, 14.6.2019).

- (65) In order to define the elements of the phase out of venting and flaring in coking coal mines, the power to adopt acts in accordance with Article 290 of the Treaty on the Functioning of the European Union should be delegated to the Commission to supplement this Regulation by setting out restrictions on venting methane from ventilation shafts for coking coal mines. In addition, in order to allow for further information to be required from importers, as proved necessary, the power to adopt acts in accordance with Article 290 of the Treaty on the Functioning of the European Union should be delegated to the Commission to supplement this Regulation by amending or adding to the information to be provided by importers. Furthermore, in order to define the methodology for calculating the methane intensity associated to crude oil, natural gas and coal placed in the Union market at the level of the producer or company, as well as to establish the relevant methane intensity values and classes, the power to adopt acts in accordance with Article 290 of the Treaty on the Functioning of the European Union should be delegated to the Commission to supplement this Regulation. It is of particular importance that the Commission carry out appropriate consultations during its preparatory work, including at expert level, and that those consultations be conducted in accordance with the principles laid down in the Interinstitutional Agreement on Better Law-Making of 13 April 2016. In particular, to ensure equal participation in the preparation of delegated acts, the European Parliament and the Council receive all documents at the same time as Member States' experts, and their experts systematically have access to meetings of Commission expert groups dealing with the preparation of delegated acts.
- (66) In order to ensure uniform conditions for implementation, implementing powers should be conferred on the Commission to adopt detailed rules with regard to common formats for reporting, definition of minimum detection limits for leak detection and repair surveys, as well as procedure and individual decisions in relation to the equivalence of monitoring, reporting and verification measures in third countries, in accordance with Article 291 of the Treaty on the Functioning of the European Union. Those powers should be exercised in accordance with Regulation (EU) No 182/2011 of the European Parliament and of the Council²⁹.

²⁹ Regulation (EU) No 182/2011 of the European Parliament and of the Council of 16 February 2011 laying down the rules and general principles concerning mechanisms for control by Member States of the Commission's exercise of implementing powers (OJ L 55, 28.2.2011, p. 13).

- (66a) The Commission should monitor and review the application of this Regulation and submit a report to the European Parliament and to the Council. The report should notably review the effectiveness and efficiency of the Regulation, the level of emissions reduction achieved and whether additional or alternative measures are necessary. The review should take into account the relevant Union legislation in related fields. Depending on the outcome of that report and as part of the review of this Regulation, the Commission may consider submitting appropriate legislative proposals.
- (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.
- (68) Since the objective of this Regulation, namely the accurate measurement, quantification, monitoring, reporting, verification and the reduction of methane emissions in the energy sector, cannot be achieved by the Member States individually and can therefore, by reason of its scale, be better achieved at Union level, the Union may adopt measures, in accordance with the principle of subsidiarity as set out in Article 5 of the Treaty on European Union. In accordance with the principle of proportionality, as set out in that Article, this Regulation does not go beyond what is necessary in order to achieve that objective,

HAVE ADOPTED THIS REGULATION:

Chapter 1

General Provisions

Article 1

Subject matter and scope

1. This Regulation lays down rules for the accurate measurement, quantification, monitoring, reporting and verification of methane emissions in the energy sector in the Union, as well as the abatement of those emissions, including through leak detection and repair surveys, repair obligations and restrictions on venting and flaring. This Regulation also lays down rules on tools ensuring transparency of methane emissions.

2. This Regulation applies to:
- (a) oil and fossil gas exploration and production, including inactive wells, temporarily plugged wells, permanently plugged and abandoned wells, and fossil gas gathering and processing;
 - (b) natural gas transmission, distribution (excluding metering systems at final consumption points and the parts of service lines between the distribution network and metering system located on the property of final customers), underground storage and liquefied natural gas terminals;
 - (c) operating underground and surface coal mines, closed underground coal mines and abandoned underground coal mines.
3. This Regulation applies also to methane emissions occurring outside the Union, with respect to crude oil, natural gas and coal placed on the Union market, as referred to in Chapter 5.

Article 2

Definitions

For the purposes of this Regulation, the following definitions apply:

- (1) ‘methane emissions’ means all direct emissions occurring from all components that are potential sources of methane emissions, whether as a result of venting, incomplete combustion in flares or from other components and leaks;
- (1a) ‘transmission’ means transmission as defined in point (3) of Article 2 of Directive 2009/73/EC of the European Parliament and of the Council³⁰ [to be adapted as per ongoing recast proposal];

³⁰ Directive 2009/73/EC of the European Parliament and of the Council of 13 July 2009 concerning common rules for the internal market in natural gas and repealing Directive 2003/55/EC (OJ L 211, 14.8.2009, p. 94).

- (1b) ‘component’ means any part or element of equipment used in oil, natural gas and coal installations or infrastructure that has the potential to emit methane.
- (2) ‘transmission system operator’ means transmission system operator as defined in point (4) of Article 2 of Directive 2009/73/EC of the European Parliament and of the Council³¹ [to be adapted as per ongoing recast proposal];
- (2a) ‘distribution’ means distribution as defined in point (5) of Article 2 of Directive 2009/73/EC [to be adapted as per ongoing recast proposal];
- (3) ‘distribution system operator’ means distribution system operator as defined in point (6) of Article 2 of Directive 2009/73/EC {to be adapted as per ongoing recast proposal];
- (4) ‘operator’ means any natural or legal person who operates or controls an asset or, where provided for in national legislation, to whom decisive economic power over the technical functioning of an asset has been delegated;
- (5) ‘mine operator’ means any natural or legal person who operates or controls a coal mine or, where provided for in national legislation, to whom decisive economic power over the technical functioning of a coal mine has been delegated;
- (5b) ‘site’ means a collection of components with some relation to one another as a subdivision of an asset;
- (6) ‘verification’ means the activities carried out by a verifier to assess the conformity of the reports transmitted by the operators and mine operators;
- (7) ‘verifier’ means a legal person which carries out verification activities and which is accredited by a national accreditation body pursuant to Regulation (EC) No 765/2008 or a natural person otherwise authorised, without prejudice to Article 5(2) of that Regulation, at the time a verification statement is issued;

³¹ Directive 2009/73/EC of the European Parliament and of the Council of 13 July 2009 concerning common rules for the internal market in natural gas and repealing Directive 2003/55/EC (OJ L 211, 14.8.2009, p. 94).

- (8) ‘source’ means a component or a geological structure that releases methane into the atmosphere whether intentionally or unintentionally, intermittently or persistently;
- (9) ‘asset’ means a business or operating unit, which can be composed of several facilities or sites, including assets under the operational control of the operator (operated assets) and assets which are not under the operational control of the operator (non-operated assets);
- (10) ‘emission factor’ means a coefficient that quantifies the emissions of a gas per unit of activity, which is either based on a sample of measurement data or other quantification methods, averaged to develop a representative rate of emission for a given activity level under a given set of operating conditions;
- (11) ‘generic emission factor’ means a standardised emission factor for each type of emission source which is derived from inventories or databases, but in any case not verified through direct measurements;
- (12) ‘specific emission factor’ means an emission factor for a type of emission source that is derived from direct measurements;
- (13) ‘direct measurement’ means measurement of the methane emission at source-level with measuring devices that allow such a measurement;
- (13a) ‘quantification’ means activities to determine the quantity of methane emissions via direct measurements or, where those are not feasible, based on other methods such as simulation tools, and other detailed engineering calculations or a combination of such methods;
- (14) ‘site-level methane emissions’ means all sources of emissions within an entire site;
- (15) ‘site-level measurement’ means a measurement that captures a complete overview of the emissions occurring across an entire site, including, for a pipeline network, emissions from segments of such a network, and typically involves the use of sensors mounted on a mobile platform, such as vehicles, drones, aircrafts, boats and satellites or other means to capture a complete overview of emissions across an entire site, such as via *the use of fixed sensors, such as continuous point sensor networks*;

- (16) ‘undertaking’ means a natural or legal person carrying out at least one of the following activities: oil and fossil gas exploration and production, fossil gas gathering and processing and gas transmission, distribution and underground storage, including with regard to liquefied natural gas;
- (17) ‘leak detection and repair survey’ means a survey to identify and detect sources of methane leaks and other unintentional methane emissions, and to repair or replace the relevant components;
- (17a) ‘Type 1 leak detection and repair survey’ means a leak detection and repair survey undertaken and carried out in accordance with the requirements set out in Articles 14(2), 14(3), 14(4) and Part 1 of Annex I for Type 1 surveys;
- (17b) ‘Type 2 leak detection and repair survey’ means a leak detection and repair survey undertaken and carried out in accordance with the requirements set out in Articles 14(2), 14(3), 14(4) and Part 1 of Annex I for Type 2 surveys;
- (17c) ‘Production location’ means a location where natural gas or oil is extracted from the ground and where no processing takes place;
- (17d) ‘Processing location’ means a location where processes are used to treat natural gas and oil, such as the separation of natural gas and oil from water;
- (17f) ‘shutdown’ means a situation where a site or part of its components is shut down from normal operating conditions and where complete or partial pressure reduction is required prior to initiating repair and maintenance works;
- (18) ‘venting’ means the direct release of uncombusted methane into the atmosphere;
- (19) ‘flaring’ means the controlled combustion of methane for the purpose of disposal in a device designed for said combustion;

- (20) ‘emergency’ means a temporary, unexpected, infrequent situation in which the methane emission is unavoidable and necessary to prevent an imminent and substantial adverse impact on human safety, public health or the environment, but does not include situations arising from or related to the following events:
- (a) failure of the operator to install appropriate equipment of sufficient capacity for the expected or actual rate and pressure of production;
 - (b) failure of the operator to limit production where the production rate exceeds the capacity of the related equipment or gathering system, except where the excess production is due to a downstream emergency, malfunction, or unscheduled repair and lasts for no longer than eight hours from the time of notification of the downstream capacity issue;
 - (c) scheduled maintenance;
 - (d) operator negligence;
 - (e) repeated failures, that is to say four or more failures within the preceding 30 days, of the same piece of equipment;
- (21) ‘malfunction’ means a sudden, unavoidable failure or breakdown of equipment beyond the reasonable control of the operator that substantially disrupts operations but does not include a failure or breakdown that is caused entirely or in part by poor maintenance, careless operation or other preventable equipment failure or breakdown;
- (22) ‘routine flaring’ means flaring during the normal production of oil or fossil gas and in the absence of sufficient facilities or amenable geology to re-inject methane, utilise it on-site, or dispatch it to a market, and excluding flaring caused by emergency or malfunction;
- (23) ‘flare stack’ means a device equipped with a burner used to flare methane;

- (23a) ‘destruction and removal efficiency’ means the mass percentage of methane that is destroyed or removed after the combustion has ceased relative to the quantity of methane entering the flare stack;
- (24) ‘Inactive well’ means an exploration or production oil or gas well or well site, onshore or offshore, in which operations for exploration or production have ceased for at least one year. It does not include temporarily plugged wells and permanently plugged and abandoned wells, as defined in this Regulation;
- (24a) ‘Permanently plugged and abandoned well’ means an oil or gas well or well site, onshore or offshore, which has been plugged and will not be re-entered, in which all operations have been terminated and in which all installations associated with the well have been removed in accordance with the applicable regulatory requirements and where documentation can be provided as established in Annex IV, Part 1, point 3;
- (24b) ‘Temporarily plugged well’ means an oil or gas well or well site, onshore or offshore, where well barriers have been installed to temporarily isolate the producing reservoir and access to the well is still provided for;
- (25) ‘remediating’ means the process of cleaning up contaminated water and soil;
- (26) ‘reclaiming’ means the process of returning a well or well site to having soil and vegetation conditions similar to those that existed before it was disturbed;
- (27) ‘coal mine’ means a site where coal mining occurs or has occurred, including lands, excavations, underground passageways, shafts, slopes, tunnels and workings, structures, facilities, equipment, machines and tools situated on the surface or underground and used in, or resulting from the work of extracting lignite, subbituminous coal, bituminous coal, or anthracite from its natural deposits in the earth by any means or method, including the work of preparing the coal to be extracted;

- (28) ‘operating coal mine’ means a coal mine where the majority of its revenue comes from the work of extracting lignite, subbituminous coal, bituminous coal or anthracites, and where at least one of the following conditions apply:
- (a) mine development is underway.
 - (b) coal has been produced within the last 90 days.
 - (c) mine ventilation fans in operation.
- (29) ‘underground coal mine’ means a coal mine where coal is produced by tunnelling into the earth to the coalbed, which is then mined with underground mining equipment such as cutting machines and continuous, longwall and shortwall mining machines, and transported to the surface;
- (30) ‘surface coal mine’ means a coal mine where coal lies near the surface and can be extracted by removing the covering layers of rock and soil;
- (31) ‘ventilation shaft’ means a vertical passage used to move fresh air underground or to remove methane and other gases from an underground coal mine;
- (32) ‘drainage station’ means a station collecting methane from a coal mine gas drainage system;
- (33) ‘drainage system’ means a system, which may comprise multiple methane sources and which drains methane-rich gas from coal seams or surrounding rock strata and transports it to a drainage station;
- (34) ‘post-mining activities’ are activities carried out after coal has been mined and brought to the surface, including coal handling, processing, storage, and transport;
- (35) ‘continuous measurement’ means a measurement where the reading is taken at least every minute;

- (36) ‘ventilation air methane’ means methane emitted from coal seams and other gas-bearing strata and which enters the ventilation air and is exhausted from the ventilation shaft;
- (37) ‘coal deposit’ is an area of the land containing significant concentrations and minable quantities of coal, defined according to the Member State’s methodology on documenting geological mineral deposits;
- (38) ‘closed coal mine’ means a coal mine where coal production has ceased, which is closed in accordance with the applicable licensing requirements or other regulations, and for which an operator, owner or licensee has still and active permit, license or any other legal document under the jurisdiction of a Member State to confer responsibility for the coal mine;
- (39) ‘abandoned coal mine’ means a coal mine where coal production has ceased but for which an operator, owner or licensee cannot be identified as subject to the obligations under any active permit, license or any other legal document under the jurisdiction of a Member State to confer responsibility for the coal mine, or that has not been closed in a regulated manner;
- (39a) ‘alternative use of an abandoned coal mine’ means the use of the subsurface mine infrastructure and coal mining equipment for purposes other than coal production.
- (39a) ‘coal mining equipment in closed or abandoned coal mine’ means any equipment that remains linked to the methane-bearing strata, including but not limited to gob vents and drainage pipes;
- (40) ‘coking coal mine’ means a mine where at least 50% of the production output averaged over the last three available years is coking coal, as defined in Annex B of Regulation (EC) no 1099/2008 of the European Parliament and of the Council³²;

³² Regulation (EC) No 1099/2008 of the European Parliament and of the Council of 22 October 2008 on energy statistics (OJ L 304, 14.11.2008, p. 1)

- (40a) ‘producer’ means an undertaking which, in the course of a commercial activity, extracts coal, crude oil or natural gas from the ground in a licensed area including processing of coal, crude oil and natural gas and its conveyance through connected infrastructure within that licensed area.
- (41) ‘importer’ means a natural or legal person who, in the course of a commercial activity, places natural gas, crude oil or coal from a third country on the Union market including any natural or legal person established in the Union appointed to carry out acts and formalities required under Chapter 5 of this Regulation.
- (41a) ‘methane intensity performance profile’ means the individual information and datasheets for, Member States, third countries and, as applicable, Union producers or importers, as well as third country producers or exporters supplying to the Union, as applicable, placing crude oil, natural gas or coal on the Union market, which are published in the methane transparency database.
- (41b) ‘super emitting event’ means an event occurring within or outside the Union where a source or a set of closely connected sources in a site emit methane above 100 kilograms of methane per hour.
- (41c) ‘exporter’ means the contractual counterparty in each supply contract entered into by the importer for the supply of crude oil, natural gas or coal into the Union.
- (41f) ‘reconciliation process’ means the investigation and explanation of the reasons for the discrepancies between source-level quantification and site-level measurement of methane emissions and in the case of statistically significant discrepancies between the two.

Article 3

Costs of regulated operators

1. When fixing or approving tariffs or the methodologies to be used by transmission system operators, distribution system operators, liquefied natural gas terminal operators or other regulated companies including where applicable underground gas storage operators, regulatory authorities shall take into account the costs incurred and investments made to comply with the obligations under this Regulation, insofar as they correspond to those of an efficient and structurally comparable regulated operator and are transparent. The unit investment costs referred to in paragraph 2 may be used by the regulatory authorities to benchmark the costs incurred by the operators.
2. Every three years, the European Union Agency for the Cooperation of Energy Regulators (ACER) shall establish and make publicly available a set of indicators and corresponding reference values for the comparison of unit investment costs linked to measurement, quantification, monitoring, reporting, verification and abatement of methane emissions, including from leaks, venting and flaring, for comparable projects. The relevant regulatory authorities and the regulated operators shall provide ACER with all the data necessary for that comparison.

Chapter 2

Competent authorities and independent verification

Article 4

Competent authorities

1. Each Member State shall designate one or more competent authorities responsible for monitoring and enforcing the application of this Regulation.

Member States shall notify the Commission of the names and contact details of the competent authorities by ... [6 months after the date of entry into force of this Regulation]. Member States shall notify the Commission without delay of any changes to the names or contact details of the competent authorities.

2. The Commission shall make a list of the competent authorities publicly available and shall regularly update that list upon receipt of a notification of any change from a Member State.
3. Member States shall ensure that the competent authorities establish a contact point, have adequate powers and resources to perform the obligations set out in this Regulation.

Article 5

Tasks of the competent authorities

1. The competent authorities shall take, in performing their tasks, the necessary measures to ensure compliance with this Regulation.
2. Operators, mine operators, undertakings and importers, shall provide the competent authorities with all assistance necessary to enable or facilitate the performance of the tasks of the competent authorities referred to in this Regulation, notably as regards access to the sites, the presentation of documentation or records and, in case the site is located offshore, transport to or from the site.
3. The competent authorities shall cooperate with each other and with the Commission and may cooperate with authorities of third countries, in order to ensure compliance with this Regulation. The Commission shall set up a network of competent authorities to foster cooperation, with the necessary arrangements for exchanging information, in particular, on monitoring, regulating and compliance, and best practices and allow for consultations. The contact points established within the competent authorities shall support those activities.
4. Where reports are to be made public in accordance with this Regulation, the competent authorities shall make them publicly available and free of charge, on a designated website and in freely accessible, downloadable and machine readable format.

Where information is kept confidential in accordance with Article 4 of Directive 2003/4/EC or where necessary under Union law on the protection of personal data, the competent authorities shall indicate the type of information that has been withheld and the reason therefor.

Article 6

Inspections

1. Inspections shall include routine inspections for operators and mine operators and non-routine inspections for operators, mine operators and importers, in accordance with the elements set out in this Article.
2. Inspections shall include, where relevant, site checks or field audits examination of documentation and records that demonstrate compliance with the requirements of this Regulation, methane emissions detection and concentration measurements and any follow-up action undertaken by or on behalf of the competent authority to check and promote compliance of sites with the requirements of this Regulation.

Where an inspection has identified a serious breach of the requirements of this Regulation, the competent authorities shall issue a notice of remedial actions to be undertaken by the operator, mine operator or importer, with clear deadlines for those actions, as part of the report referred to in paragraph 5. Alternatively, the competent authorities may decide to instruct the operator, mine operator or importer to submit to their approval a set of remedial actions to address the breaches identified within one month from the conclusion of the inspection. Those actions shall be included in the report referred to in paragraph 5.

3. The first routine inspection shall be completed by 21 months after the date of entry into force of this Regulation. After the first routine inspection, the competent authorities shall draw up programmes for routine inspections based on a risk assessment. Competent authorities may decide on the scope and frequency of routine inspections, based on an appraisal of the risks associated with each site, such as environmental risk, including assessment of cumulative impacts of all methane emissions as a pollutant, human safety and public health risks, as well as any identified breaches of this Regulation. The period between inspections shall not exceed three years. Where an inspection has identified a serious breach of the requirements of this Regulation, the subsequent inspection shall take place within a maximum period of 10 months.
4. Without prejudice to routine inspections, the competent authorities shall carry out non-routine inspections:
 - (a) to investigate substantiated complaints referred to in Article 7 and occurrences of non-compliance as soon as possible after the date the competent authorities become aware of such complaints or non-compliance and no later than 10 months after that date;
 - (b) to ensure, where deemed relevant by the competent authorities, that leak repairs or replacements of components were carried out in accordance with Article 14 and that mitigation measures were implemented in accordance with Articles 18, 22 and 26;
 - (ba) to verify, where deemed relevant by the competent authorities, compliance by importers with this Regulation.
5. Following each inspection, the competent authorities shall prepare a report describing the legal basis for the inspection, the procedural steps followed, the relevant findings and recommendations for further actions by the operator, mine operator or importer, including the deadlines for their implementation. Where appropriate, the competent authorities may prepare one report covering multiple inspections of components, assets or sites of the same operator or mine operator provided such inspections are done in the same inspection period.

The report shall be notified to the operator, mine operator or importer concerned and made publicly available within two months of the date of the inspection. Where the report was triggered by a complaint made in accordance with Article 7, the competent authorities shall notify the complainant once the report is publicly available.

The report shall be made publicly available by the competent authorities in accordance with Directive 2003/4/EC. Where information falls under an exception in accordance with Article 4 of Directive 2003/4/EC, the competent authorities shall indicate in the report the type of information that has been withheld and the reason thereof.

6. Member States may enter into formal agreements with appropriate institutions, agencies or public bodies of the Union or other Member States or other suitable intergovernmental organisations or public bodies where available for the provision of specialist expertise to support the competent authority in carrying out the functions attributed to them by this article. For the purposes of this paragraph a body shall not be deemed suitable where its objectivity may be compromised by a conflict of interest.
7. Where the inspection report referred to in paragraph 5 concludes that the operators, mine operators or importers do not comply with the requirements of this Regulation, operators, mine operators or importers shall take all the necessary actions to bring their operations into compliance with the Regulation. The actions shall be taken, without delay, within the period determined by the competent authorities.

Article 7

Complaints lodged with the competent authorities

1. Any natural or legal person, may lodge a written complaint with the competent authorities on a possible breach of the requirements of this Regulation by operators, mine operators or importers.
2. The complaints shall be duly substantiated and contain sufficient evidence of the alleged breach.

3. Where it becomes apparent that the complaint does not provide sufficient evidence to justify pursuing an investigation, the competent authorities shall inform the complainant within a reasonable time but not later than two months, of the reasons for their decision not to pursue an investigation. This paragraph shall not apply where complaints that are not sufficiently substantiated are repeatedly lodged and for that reason deemed abusive by the competent authorities.
4. Without prejudice to the rules applicable pursuant to national law and paragraph 3, the competent authorities shall keep the complainant informed of the steps taken in the procedure and, where applicable, inform them of appropriate alternative forms of redress, such as recourse to national courts or any other national or international complaints procedure.
5. Without prejudice to the rules applicable pursuant to national law and on the basis of comparable procedures, the competent authorities shall establish and make publicly available indicative periods to take a decision on complaints.

Article 8

Verification activities and verification statement

1. Verifiers shall assess the conformity of the emissions reports submitted to them by operators, mine operators or importers, in accordance with this Regulation. They shall assess the conformity of the reports with the requirements laid down in this Regulation and review all data sources and methodologies used in order to assess their reliability, credibility and accuracy, in particular the following points:
 - (a) the choice and employment of emission factors;
 - (b) the methodologies, calculations, samplings, statistical distributions and levels of materiality leading to the determination of methane emissions;
 - (c) any risks of inappropriate measuring or reporting;

(d) any quality control or quality assurance systems applied by the operators, mine operators or importers.

2. In carrying out the verification activities referred to in paragraph 1, verifiers shall use the standards and technical prescriptions, as applicable, for methane emissions measurement, quantification and mitigation established in accordance with Article 29a.

Until such a date where the standards and technical prescriptions, as applicable, are established, operators, mine operators, undertakings and importers, as applicable, shall provide information to the verifiers on the relevant standards, including international standards, or methodologies used by the operators, for the purpose of verification activities.

Verifiers shall, where relevant, conduct announced and unannounced site checks to determine the reliability, credibility and accuracy of the data sources and methodologies used.

- 2a. deleted
- 2b. The verification activities referred to in this Article shall be aligned with European or international standards and methodologies in order to limit the burden on operators, mine operators or importers, insofar as those importers are required pursuant to Article 27, and on competent authorities and take due account of the nature of the operator's activities and guidance issued by the Commission in that respect, where necessary.

3. Verifiers shall issue a verification statement verifying the conformity of the emissions report and specifying the verification work carried out, once their assessment concludes with reasonable assurance that the emissions report complies with the requirements of this Regulation.

The verifiers shall only issue the verification statement where reliable, credible and accurate data and information enable the methane emissions to be determined with a reasonable degree of certainty and provided the reported data is coherent with the estimated data, complete and free of inconsistencies.

Where the assessment concludes that the emissions report does not comply with the requirements of this Regulation, the verifiers shall inform the operator, the mine operator or the importer thereof and provide reasoned feedback to the operator or the mine operator in light of recognised standards. The operator, the mine operator or the importer shall submit a revised emissions report to the verifier without delay and within the deadline specified by the verifier.

4. Operators, mine operators and importers shall provide the verifiers with all the assistance necessary to enable or facilitate the performance of the verification activities, notably as regards access to the sites and the presentation of documentation or records.
5. deleted

Article 9

Independence and accreditation or authorisation of verifiers

1. Verifiers shall be independent from the operators, mine operators, undertakings and importers and shall carry out the activities required under this Regulation in the public interest. For that purpose, neither the verifiers nor any part of the same legal entity shall be an operator, mine operator, undertaking or importer, the owner of an operator, mine operator, undertaking or importer, or be owned by them, nor shall the verifiers have relations with operators, mine operators, undertakings or importers that could affect their independence and impartiality.
2. Verifiers, that are legal persons shall be accredited by a national accreditation body pursuant to Regulation (EC) No 765/2008.
3. Where no specific provisions concerning the accreditation of verifiers are laid down in this Regulation, the relevant provisions of Regulation (EC) No 765/2008 shall apply.
- 3a. Member State may decide to authorise verifiers that are natural persons for the purpose of this Regulation. The authorisation of those verifiers shall be entrusted to a national authority other than the national accreditation body appointed pursuant to Article 4(1) of Regulation (EC) No 765/2008.

- 3b. Where a Member State decides to use the option laid down in paragraph 3a, it shall ensure that the national authority concerned meets the requirements of this Regulation and provides the Commission and the other Member States with all the documentary evidence necessary for the verification of the competence of the verifiers it authorises under paragraph 3a .

Article 10

Use and sharing of information

1. In performing their obligations and exercising their powers under this Regulation, verifiers, the competent authorities and the Commission shall consider the information made available to the public by the International Methane Emissions Observatory (IMEO) and other relevant internationally available information, in particular with regard to the following:
- (a) aggregation of methane emissions data in accordance with appropriate statistical methods;
 - (b) verification and validation of methodologies and statistical processes employed by companies to quantify methane emissions data;
 - (c) development of data aggregation and analysis methodologies in accordance with scientific and statistical good practice to ensure a higher level of accuracy of emission estimates, with appropriate characterization of the uncertainty;
 - (d) publication of aggregated reported data by core source and by level of reporting, classified by, where available, operated and non-operated assets, in compliance with competition and confidentiality requirements;
 - (e) reporting of findings on major discrepancies between data sources contributing to build more robust scientific methodologies;
 - (ea) reporting of super emitting events identified by way of an early detection and warning system.

2. The Commission shall submit publicly available methane emissions data that it deems relevant to the International Methane Emissions Observatory, as made available to it by the competent authorities in accordance with this Regulation.

Chapter 3

Methane emissions in the oil and gas sectors

Article 11

Scope

This Chapter applies to the activities referred to in points (a) and (b) of Article 1(2).

Article 12

Monitoring and reporting

1. By 12 months from the date of entry into force of this Regulation, operators shall submit a report to the competent authorities containing the quantification of source-level methane emissions estimated using at least generic emission factors for all sources. The report may already contain quantification of source level methane emissions in accordance with the requirements set out in paragraph 2 for some or all sources.
2. Operators and undertakings established in the Union shall submit a report to the competent authorities of the Member State where the asset is located containing quantification of source-level methane emissions:
 - (a) for operated assets by 18 months from the date of entry into force of this Regulation and

- (b) for non-operated assets by 30 months from the date of entry into force of this Regulation, provided these assets have not been reported by an operator pursuant to the obligation under point (a).

In the case where direct measurement is not possible, reporting at such level shall involve the use of specific emission factors based on source-level quantification or sampling.

- 3. Operators and undertakings established in the Union shall submit a report to the competent authorities of the Member State where the asset is located containing quantification of source-level methane emissions, complemented by measurements of site-level methane emissions, thereby allowing assessment of and comparison with the source-level estimates aggregated by site:
 - (a) for operated assets by 30 months from the date of entry into force of this Regulation] and by 31 May every year thereafter, and
 - (b) for non-operated assets by 48 months from the date of entry into force of this Regulation] and by 31 May every year thereafter, provided those have not been reported by an operator pursuant to point (a).

Before submission to the competent authorities, operators and undertakings 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.

4. deleted

5. deleted

- 6. The reports provided for in this Article shall cover the last available calendar year period and include at least the following information:
 - (a) emission source type and location;
 - (b) data per detailed emission source type, reported in tons of methane and in tons of CO₂ equivalent, using global warming potentials as defined by the IPCC sixth assessment report;

- (c) detailed information on the quantification methodologies ;
- (d) all methane emissions for operated assets;
- (e) share of ownership and methane emissions from non-operated assets multiplied by the share of ownership;
- (f) a list of the entities with operational control of the non-operated assets.

The Commission shall, by means of implementing acts, lay down a reporting template for the reports under this Article taking into account the national inventory reports already in place and the latest technical guidance documents and reporting templates of the Oil and Gas Methane Partnership ('OGMP'). Those implementing acts shall be adopted in accordance with the procedure referred to in Article 32(2). Until the adoption of the relevant implementing acts, operators and undertakings shall use the technical guidance documents and reporting templates for upstream and for mid and downstream operations, as applicable, of the OGMP 2.0.

7. The measurements and quantifications referred to in this Article shall be undertaken in accordance with the standards and technical prescriptions, as applicable, pursuant to Article 29a. Until such a date when standards or technical prescriptions referred to in Article 29a come into application, operators and undertakings, as applicable, shall follow state of the art industry practices and best available technologies for methane emissions measurement and quantification and may use the latest OGMP 2.0 technical guidance documents approved by the date of entry into force of this Regulation for such purpose. Operators and undertakings, as applicable, shall provide competent authorities and verifiers with information on the standards, including international standards, or methodologies used.
8. Operators and undertakings, as applicable, shall compare source-level quantification of methane emissions and site-level measurement of methane emissions. In the case of statistically significant discrepancies between the source-level quantification and the site-level measurement of methane emissions, operators or undertakings, as applicable, shall:

- (a) notify without delay the competent authority during the applicable reporting period pursuant to paragraph 3
- (b) carry-out a reconciliation process as soon as possible and inform the competent authority about the results of the reconciliation process, including any evidence and supporting documents as necessary, no later than the next reporting period.

The competent authority may request additional information or additional actions to the operator or undertaking if it considers that the results, evidences or supporting documents of the reconciliation process provided by the operator or undertaking does not adequately explain the reasons for the discrepancies. Possible reasons for discrepancies shall include, but not be limited to, the accuracy and appropriateness of both the source and site level methane emissions quantification or measurement technologies and methodologies employed, or any data uncertainties in the results due to the selected methods, technologies or extrapolation of results. The operators shall consider, during the reconciliation process, including additional source-level quantification or site level measurements in order to provide the necessary evidence to explain the reasons for the discrepancies. Based on the conclusions of the reconciliation process, operators and undertakings shall implement the subsequent adjustments in numerical terms in source-level quantification or site-level measurements, where appropriate.

- 9. deleted
- 10. Where information is kept confidential in accordance with Directive (EU) 2016/943 of the European Parliament and of the Council³³, operators shall indicate in the report the type of information that has been withheld and the reason thereof.
- 11. The competent authorities shall make the reports set out in this Article available to the public and the Commission, within three months from submission by operators and in accordance with Article 5(4).

³³ Directive (EU) 2016/943 of the European Parliament and of the Council of 8 June 2016 on the protection of undisclosed know-how and business information (trade secrets) against their unlawful acquisition, use and disclosure (OJ L 157, 15.6.2016)

Article 13

General mitigation obligation

Operators shall take all appropriate mitigation measures to prevent and minimise methane emissions in their operations.

Article 14

Leak detection and repair

1. By ... [9 months from the date of entry into force of this Regulation] for existing sites and by 6 months from the date of start of operations for new sites, operators shall submit a leak detection and repair programme to the competent authorities which shall detail the contents of the surveys and activities, including specific timelines, to be carried out in accordance with the requirements in this Article, Parts 1 and 2 of Annex I and the relevant standards and technical prescriptions, as applicable, pursuant to Article 29a. If any changes to the leak detection and repair programme are made, operators shall re-submit the programme to the competent authorities as soon as possible.

Until such a date when standards or technical prescriptions referred to in Article 29a come into application, operators shall follow state of the art industry practices and best commercially available technologies for leak detection and repair surveys. Operators and undertakings, as applicable, shall provide competent authorities and verifiers with information on the standards, including international standards, or methodologies used.

The competent authorities may require the operator to amend the programme taking into account the requirements of this Regulation.

2. Operators shall initiate the first type 2 leak detection and repair survey of all components under their responsibility in accordance with the leak detection and repair programme referred in paragraph 1 as soon as possible after the entry into force of this Regulation. This leak detection and repair survey shall be carried out by 12 months from the date of entry into force of this Regulation for existing sites. Without prejudice to the frequencies established pursuant to Part 1 of Annex I, Type 2 leak detection and repair surveys carried out between 24 months before the entry into force of this regulation and entry into force of this regulation]may be considered by operators as the first type 2 leak detection and repair survey. By 9 months from the date of start of operations of new sites, operators shall carry out the first type 2 leak detection and repair survey of all components under their responsibility in accordance with the leak detection and repair survey referred in paragraph 1.

After carrying out the first type 2 leak detection and repair survey, type 1 and type 2 leak detection and repair surveys shall be carried out with the following frequencies:

- (a) for aboveground and underground components, excluding distribution and transmission networks, in accordance with the minimum frequencies set out in point 1, Part 1 of Annex I;
- (b) for components of distribution and transmission networks, in accordance with the minimum frequencies set out in point 2, Part 1 of Annex I;
- (c) for all offshore components, in accordance with the minimum frequencies set out in point 3, Part 1 of Annex I;
- (d) for all other components, in accordance with the minimum frequencies set out in point 4, Part 1 of Annex I.

2b. Deleted

2c. Deleted

2d. Deleted

- 2e. Without prejudice to the obligation to carry out type 2 surveys in accordance with this Article, operators may choose to carry out a type 2 leak detection and repair survey instead of a type 1 leak detection and repair survey when a type 1 survey is due.
- 2f. As part of the leak detection and repair surveys, operators may use advanced detection technologies, provided that: a) the competent authorities approve its use in the context of the leak detection and repair programme referred to in paragraph 1; b) the measurement is undertaken at the level of each individual potential emission source; and c) the advanced detection technologies comply with the requirements set out in paragraphs 3 and 4 and are in accordance with the requirements set out in Part 2 of Annex I.
- 2aa Where operators producing or processing natural gas or oil provide evidence on the basis of measurements reported by the operator and assessed by a verifier as part of the reports in accordance with Article 12 during the five preceding years that less than 1 % of all their components and subcomponents in each site are leaking and that the methane emissions associated with these leaks aggregated represent less than 0.08% of the total volume of gas or 0.015% of the total mass of oil processed or extracted, different LDAR survey frequencies for components where no leaks were identified may be used in that site, subject to the approval of the competent authorities and provided that:
- a. For all components at processing locations, Type 1 LDAR surveys are performed at least every 12 months;
 - b. For at least 25% of all components at processing locations, Type 2 LDAR surveys are performed every 12 months, ensuring that all components are checked every 48 months;
 - c. For all components at production locations, Type 1 LDAR surveys are performed at least every 36 months;
 - d. For all components at production locations, Type 2 LDAR surveys are performed at least every 60 months.

If the number of leaks detected following the surveys performed in accordance with the first subparagraph exceeds 1 % or that the methane emissions associated with these leaks aggregated represent more than 0.08% of the total volume of gas or 0.015% of the total mass of oil processed or extracted, the operator shall be subject to obligations under paragraphs 2 and 2a in that site. The competent authority shall notify to the Commission the derogations granted pursuant to this paragraph and shall carry out non-routine inspections pursuant to Article 6 (4).

3. By 12 months after entry into force of this Regulation, the Commission shall, by means of an implementing act, specify:
 - a. the minimum detection limits and the detection techniques to be employed for the different detection devices to be used for meeting the requirements specific to all components in paragraph 4;
 - b. the thresholds applicable to the first step of the surveys to be used for meeting the requirements specific to all underground components in paragraph 4.

Those limits, thresholds and techniques shall be based on the best available technologies and detection techniques, taking into account the different types of components and leak detection and repair surveys. That implementing act shall be adopted in accordance with the procedure referred to in Article 32(3).

Until the adoption of the implementing act in order to meet the requirements of paragraph 4, operators shall use the best available technologies and detection techniques, in compliance with the manufacturer specifications for operation and maintenance.

- 3a. The surveys shall be undertaken with detection devices allowing to identify leaks as follows, for each type of component:
 - (a) at a level as close as possible to each individual potential emission source for aboveground components and above the sea level components;

- (b) at the interface between ground and atmosphere for underground components as a first step and, in case a leak is detected in accordance with paragraph 3, as close as possible to the emission source as a second step.
- (c) applying the best commercially available detection techniques for offshore components below the sea and below the seabed.
4. Operators shall repair or replace all components found to be emitting methane at or above the following levels at standard temperature and pressure in compliance with the manufacturer specifications for operation and maintenance:
- a. In case of type 1 leak detection and repair surveys: 7000 parts per million in volume of methane or 17 grams per hour of methane;
- b. In case of type 2 leak detection and repair surveys:
- i. 500 parts per million in volume of methane or 1 gram per hour of methane for aboveground components and for offshore components above the sea level;
- ii. 1000 parts per million in volume of methane or 5 grams per hour of methane for the second step of underground components
- iii. 7000 parts per million in volume of methane or 17 grams per hour for offshore components below the sea level and below the seabed.

4a. The repair or replacement of the components referred to in paragraph 4 shall take place immediately after detection, or as soon as possible for a first attempt but no later than 5 days after detection and 30 days for a complete repair. The operators shall prioritize repairs of larger leaks. Repairs or replacements referred to in this paragraph shall use best commercially available technologies that provide long-term protection against future leakage. Where operators can demonstrate that the repair referred to in this paragraph is not successful or possible within 5 days for a first attempt or if the operator anticipates that a complete repair shall not be possible within 30 days due to safety, administrative, or technical considerations, the operators shall provide evidence thereof and shall notify to the competent authority a repair and monitoring schedule as set out in Annex Ia no later than 12 days after detection. The repair and monitoring schedule shall include all the necessary evidence justifying such a decision to delay repair. The repair and monitoring schedule shall guarantee that the environmental impact is minimized, while respecting safety, administrative, and technical considerations. The competent authorities may require the operator to amend the repair and monitoring schedule taking into account the requirements of this Regulation. The repair or replacement shall be carried out as soon as possible.

Safety, administrative and technical considerations, as referred to in this paragraph, shall be limited to:

- (a) safety of personnel and humans in proximity to the detected leak;
- (b) any adverse environmental impacts of taking action if the operator can demonstrate that those impacts would be greater than the environmental benefits of taking action, such as where a repair could lead to a higher overall level of methane emissions than would be the case in the absence of the repair;
- (c) accessibility to a component, including scheduled maintenance, permitting process requirements or required administrative public authorization
- (d) unavailability of replacement parts necessary for the repair of the component or components necessary for the replacement, and

- (e) significant deterioration of the gas supply situation likely to lead to a crisis level as established in Article 11(1) of Regulation (EU) 2017/1938³⁴.

- 4b. Where, due to one or more of the conditions set out in points (a)-(e) applying, a shutdown is required before the repair or replacement can be undertaken, operators shall minimise the leak within 1 day of detection and shall repair the leak by the end of the next scheduled shutdown or within a year, whichever is sooner, unless carrying out an earlier repair could reasonably be expected to lead to a situation whereby the amount of methane vented during repair operations would very likely be significantly higher than the amount of methane that would leak in the absence of a repair, or unless carrying out an earlier repair could reasonably be expected to lead to security of supply issues in small connected systems as defined in Directive (EU) 2019/944. All the necessary evidence justifying the decision to delay repair shall be without any delay provided to the competent authorities. Decisions to delay repair shall require approval by the competent authorities before being carried out and shall be included in the repair and monitoring schedule set out in Annex Ia. The competent authorities may require the operator to amend the repair and monitoring schedule taking into account the requirements of this Regulation.
- 4c. Operators shall establish, maintain and make fully available to the competent authorities, a record of all decisions to delay repair pursuant to this Article, including all necessary evidence justifying each decision and the corresponding repair and monitoring schedules. Operators shall enter that information in the record without delay.
- 5. Notwithstanding paragraph 2, operators shall survey components that were found to be emitting:
 - (a) at levels of methane equal to or higher than the thresholds in paragraph 4 at standard temperature and pressure during any of the previous surveys immediately after the repair carried out pursuant to paragraph 4a, and no later than 45 days thereafter to ensure that the repair was successful; and

³⁴ Regulation (EU) 2017/1938 of the European Parliament and of the Council of 25 October 2017 concerning measures to safeguard the security of gas supply and repealing Regulation (EU) No 994/2010 (OJ L 280, 28.10.2017, p. 1–56)

- (b) at levels of methane lower than the thresholds in paragraph 4 at standard temperature and pressure, no later than 3 months after the emissions were detected, to check at least once whether the size of loss of methane has changed and a repair is needed.

Where a higher risk to safety or a higher risk of methane losses is identified, the competent authorities may recommend that surveys of the relevant components take place more frequently.

6. Without prejudice to the reporting obligations pursuant to paragraph 7, operators shall record all identified leaks, irrespective of their size, and shall regularly survey them and ensure that they are repaired in accordance with paragraph 4.

Operators shall keep the record for at least ten years and shall provide that information to competent authorities upon their request.

7. Every year, operators shall submit all repair and monitoring schedules and a report summarising the results of all surveys completed during the previous year to the competent authorities of the Member State where the relevant assets are located. The repair and monitoring schedules shall include at least the elements set out in Annex Ia.

The competent authorities may require the operator to amend the above-mentioned report or the repair and monitoring schedules report taking into account the requirements of this Regulation.

8. Operators may delegate any of the tasks set out in this Article. Delegated tasks shall not affect the responsibility of operators and shall not impact the effectiveness of supervision by the competent authorities.
9. Member States shall ensure that certification, accreditation schemes or equivalent qualification schemes, including suitable training programmes, are available to service providers and to operators with respect to the surveys.

- 9a. Without prejudice to the provisions of Directive 2013/30/EU and Directive 2008/56/EC, competent authorities may decide to exempt offshore oil and gas components located in their territory at a water depth greater than 700 meters from the obligations under this Article if robust evidence can be provided that the impact on the climate of potential emissions from those components is highly likely to be negligible.

Article 15

Limits to venting and flaring

1. Venting shall be prohibited except in the circumstances provided for this Article. Routine flaring shall be prohibited.
2. Venting and flaring shall only be allowed in case of an emergency or malfunction.
3. In addition to paragraph 2, venting and flaring shall also be allowed where unavoidable and strictly necessary and subject to the reporting obligations set out in Article 16. It shall include the following specific situations where venting or flaring, as applicable, cannot be completely eliminated or is necessary for safety reasons:
 - (a) during normal operations of pneumatic devices, compressors, atmospheric pressure storage tanks, sampling and measurement devices and dry gas seals, or other components designed to vent, provided that the equipment meets the standards or technical prescriptions established pursuant to Article 29a and is properly maintained to minimise methane losses
 - (b) to unload or clean-up liquid holdup in a well to atmospheric pressure;
 - (c) during gauging or sampling a storage tank or other low-pressure vessel, provided that the tank or vessel meets the standards or technical prescriptions established pursuant to Article 29a;
 - (d) during loading out liquids from a storage tank or other low-pressure vessel to a transport vehicle provided that the tank or vessel meets the standards or technical prescriptions established pursuant to Article 29;

- (e) during repair, maintenance, test procedures and decommissioning, including blowing down and depressurizing equipment to perform repair and maintenance
- (f) during a bradenhead test;
- (g) during a packer leakage test;
- (h) during a production test lasting less than 24 hours;
- (i) where methane does not meet the gathering pipeline specifications, provided the operator analyses methane samples twice per week to determine whether the specifications have been achieved and routes the methane into a gathering pipeline as soon as the pipeline specifications are met;
- (j) during commissioning of pipelines, equipment or facilities, only for as long as necessary to purge introduced impurities from the pipeline or equipment;
- (k) during pigging, blow-down to repair, decommissioning or purging a pipeline for repair or maintenance, and only where the gas cannot be contained or redirected into an unaffected portion of the pipeline.

4. Where venting is allowed pursuant to paragraphs 2 and 3, operators shall vent only where flaring is not technically feasible due to lack of flammability or inability to sustain a flame, risks endangering safety of operations or personnel, or leads to a worse environmental outcome in terms of emissions. In such a situation, as part of the reporting obligations set out in Article 16, operators shall notify and provide evidence to the competent authorities of the necessity to opt for venting instead of flaring.

4a. Equipment that vents shall be replaced by non-emitting alternatives when these are commercially available and if they meet the standards or technical prescriptions for components designed to vent established pursuant to Article 29a.

5. In addition to the conditions set out in paragraphs 2 and 3, flaring shall only be allowed where either re-injection, utilisation on-site, storage for later use or dispatch of the methane to a market are not feasible for reasons other than economic considerations. In such a situation, as part of the reporting obligations set out in Article 16, operators shall demonstrate to the competent authorities the necessity to opt for flaring instead of either re-injection, utilisation on-site, storage for later use or dispatch of the methane to a market.
- 5a. Where a site is built, replaced or refurbished in whole, operators shall utilise only commercially available zero-emitting pneumatic devices, compressors, atmospheric pressure storage tanks, sampling and measurement devices and dry gas seals. Where a site is replaced or refurbished in part, operators shall utilise in that part only commercially available zero-emitting pneumatic devices, compressors, atmospheric pressure storage tanks, sampling and measurement devices and dry gas seals.
- 5b. deleted
- 5c. Where the implementation of this Article requires a permit or any other administrative approval from the relevant authorities or where the unavailability of venting or flaring equipment causes an exceptional delay of the actions required for that implementation, operators shall provide the competent authorities with a detailed implementation schedule. The schedule shall include sufficient evidence of the conditions laid down in this paragraph and the full implementation shall be carried out without delay, and shall in any case not exceed 18 months from the date of entry into force of this Regulation for existing sites and by 12 months from the date of start of operations for new sites. The competent authorities may require modifications of the schedule.

Article 16

Reporting of venting and flaring events

1. Operators shall notify the competent authorities of venting and flaring events:
 - (a) caused by an emergency, a malfunction or
 - (b) lasting a total of 8 hours or more within a 24 hour period from a single event, excluding controlled flaring that occurs during shutdowns, which shall be reported in the annual report.

The notification referred to in the first subparagraph shall be made without delay after the event and at the latest within 48 hours from the start of the event or the moment the operator became aware of it, in accordance with the elements set out in Annex II.

2. Operators shall submit to the competent authorities annual reports of all venting and flaring referred to in paragraph 1 and in Article 15 in accordance with the elements set out in Annex II, as part of the relevant report referred to in Article 12.
3. deleted

Article 17

Requirements for flaring efficiency

1. Where a site is built, replaced or refurbished in whole or in part, or where new flare stacks or other combustion devices are installed, operators shall install only combustion devices with an auto-igniter or continuous pilot and with a destruction and removal design efficiency of at least 99% .
2. Operators shall ensure that all flare stacks or other combustion devices comply with the requirements of paragraph 1 by 18 months from the date of entry into force of this Regulation.

3. Operators shall conduct inspections of flare stacks or other combustion devices every 15 days in accordance with the elements set out in Annex III, except for flares that are not used on a regular basis, which operators shall inspect before each use. As an alternative to regular inspections, operators may use remote or automated monitoring systems, if approved by competent authorities, in accordance with the elements set out in Annex III (i) and (ii). Where irregularities are detected, operators shall investigate the cause of the irregularity and remedy it within 6 hours or, in the case of bad weather or other extreme conditions, within 6 hours after the conditions return to normal.
4. Where auto-igniters or continuous pilots are used, flame supervision equipment shall be used to constantly monitor the main flare flame or the pilot flame to ensure that venting does not occur due to a flame-out condition.

Article 18

Inactive wells, temporarily plugged wells and permanently plugged and abandoned wells

1. By 12 months from the date of entry into force of this Regulation, Member States shall establish and make publicly available an inventory of all recorded inactive wells, temporarily plugged wells, and permanently plugged and abandoned wells on their territory or under their jurisdiction or where information or evidence on location exists or where location can be identified with all reasonable efforts, including at least the elements set out in Part 1 of Annex IV. Member States shall maintain and keep up to date the inventory, including by taking all reasonable efforts to locate and document all revealed inactive wells, temporarily plugged wells, and permanently plugged and abandoned wells located on their territory or under their jurisdiction, based on a robust assessment taking into account the most up to date scientific findings and best available techniques.

- 1a. By derogation from paragraph 1, Member States that notify to the Commission evidence in their territory of the existence of 40,000 or more recorded inactive wells, temporarily plugged wells, and permanently plugged and abandoned wells combined may adopt a plan for completing the inventory and the quantification of methane emissions or the demonstration that there are no methane emissions, as applicable, of all recorded inactive wells, temporarily plugged wells, and permanently plugged and abandoned wells on their territory or under their jurisdiction, or where information on location exists or where location can be identified with all reasonable efforts, including at least the elements set out in Part 1 of Annex IV, and make it publicly available, provided that:
- (a) By 12 months from the date of entry into force of this Regulation, at least 20 % of these wells are included in the inventory prioritizing inactive and temporary plugged wells;
 - (b) By 24 months from the date of entry into force of this Regulation, at least 40 % of these wells are included in the inventory;
 - (c) Every 12 months thereafter at least an additional 15 % of these wells are included in the inventory;
 - (d) All wells are included into the inventory by 72 months from the date of entry into force of this Regulation at the latest;

The plan shall be approved by the competent authorities.

2. Without prejudice to paragraph 3, reports containing information on quantification of methane emissions and, where such monitoring equipment exists, information on pressure monitoring from all inactive wells, and temporarily plugged wells shall be submitted to the competent authorities by 21 months of the date of entry into force of this Regulation and by 31 May every year thereafter. The reports set out in this Article shall include quantification of methane emissions to air and to water and information on pressure monitoring, where applicable, using the standards or technical prescriptions established pursuant to Article 29a. Until such date when standards or technical prescriptions referred to in Article 29a come into application, operators and undertakings, as applicable, shall follow state of the art industry practices and best available technologies for methane emissions measurement and quantification. Where operators or Member States report methane emissions within the framework of international or regional agreements to which the Union or the relevant Member State is a party, the reports set out in this Article may include the information reported thereunder. Reports concerning inactive and temporarily plugged wells located in Member States with 40,000 or more inactive wells, temporarily plugged wells, and permanently plugged and abandoned wells combined shall be submitted in accordance with this paragraph by 12 months after the inclusion of each of the wells in the inventory and by 31 May every year thereafter
3. Where the competent authority is provided with quantification of methane emissions and, where such monitoring equipment exists, pressure monitoring that prove that there are no methane emissions from an onshore temporarily plugged well within the last five years, paragraph 2 shall cease to apply to that well.
- Where the competent authority is provided with quantification of methane emissions and, where such monitoring equipment exists, pressure monitoring that prove that there are no methane emissions from an offshore inactive well or temporarily plugged well within the last three years, paragraph 2 shall cease to apply to that well.

- 3a. Where the competent authorities are provided with reliable evidence of material methane emissions in an offshore inactive well or in a temporarily plugged well after the period set out in paragraph 3 or in a permanently plugged and abandoned well and when this evidence has been confirmed by an independent third party, the competent authorities shall determine the application of the obligations set out in this Article for temporarily plugged wells to that well.
- 3b. Where methane emissions are detected in inactive wells, temporarily plugged wells or permanently plugged and abandoned wells, Member States or the responsible party in accordance with paragraph 5, shall take all the necessary measures available to them for remediating, reclaiming and permanently plugging that well, as applicable, and where technically feasible, and taking into account the environmental impacts of the necessary works in view of the associated reduction of the methane emissions in question.
- 3c. Before submission to the competent authorities, the reports set out in this Article shall be assessed by a verifier and include a verification statement issued in accordance with Articles 8 and 9.
4. The competent authorities shall review and make the reports and mitigation plans set out in this Article available to the public and the Commission within three months from submission by operators or completion by Member States and in accordance with Article 5(4).
5. Member States shall ensure fulfilling the obligations laid down in paragraphs 2 to 4 by the operators. Where a responsible party provides to the competent authority adequate and reliable evidence to demonstrate that it does not have the adequate financial assurance to fulfil those obligations or where the responsible party cannot be identified, the Member State shall bear responsibility.

6. By [24 months from the date of entry into force of this Regulation,] Member States or the responsible party in accordance with paragraph 5, shall develop a mitigation plan to remediate, reclaim and permanently plug inactive wells and temporarily plugged wells including at least the elements set out in Part 2 of Annex IV and implement it by 12 months after the first reports referred to in paragraph 2. Where the responsible party can demonstrate that the implementation of the mitigation plan referred to in this paragraph is not possible within 12 months after the first reports referred to in paragraph 2 due to safety, administrative or technical considerations, the responsible party may delay its implementation. The mitigation plan shall include all the necessary evidence justifying such a decision to delay the implementation. The competent authorities may require the responsible party to amend the mitigation plan taking into account the requirements of this Regulation. The implementation shall be carried out as soon as possible ensuring that the end date for the mitigation actions for each well does not exceed 3 years after the first reports referred to in paragraph 2.

Member States or the responsible party in accordance with paragraph 5, shall maintain and regularly update the mitigation plan, in line with the inventory and report referred to in this Article and any changes or new information derived therefrom, and based on a robust assessment taking into account the most up to date scientific findings and best available techniques.

Mitigation plans shall use the inventories and the reports referred to in this Article to determine priority for activities including:

- (a) remediating, reclaiming and permanently plugging wells;
- (b) reclaiming related access roads or the surrounding soil under water, as applicable;
- (c) restoring land, water, seabed and habitat impacted by wells and the prior operations;
- (d) monitoring to ensure plugged wells are not a source of methane emissions in accordance with this Article.

7. Without prejudice to the provisions of Directive 2013/30/EU and Directive 2008/56/EC, offshore oil and gas wells located at a water depth greater than 700 meters may be exempted by competent authorities from the obligations of paragraphs 2 or 6 of this Article if robust evidence can be provided that the impact on the climate of potential methane emissions from those components is highly likely to be negligible.
8. Without prejudice to the provisions of Directive 2013/30/EU and Directive 2008/56/EC, and subject to the approval of the competent authority, offshore temporarily plugged wells and permanently plugged and abandoned wells located at water depth between 200 and 700 meters may be exempt from the obligations of paragraphs 2 or 6 of this Article, where the operator demonstrates that during the environmental impact assessments conducted before drilling, or, after accidents during operations, the impact on the climate of potential methane emissions from those components is highly likely to be negligible .

Chapter 4

Methane emissions in the coal sector

Section I

Monitoring and reporting in operating mines

Article 19

Scope

1. This Section applies to operating underground and surface coal mines.
2. Methane emissions from operating underground coal mines include the following emissions:

- (a) methane emissions from all ventilation shafts in use by the mine operator;
 - (b) methane emissions from drainage stations and from the methane drainage system, whether occurring as a result of intentional or unintentional venting, or incomplete combustion in flares;
 - (c) methane emissions occurring during post-mining activities and within the area of the mine.
3. Methane emissions from operating surface coal mines include the following emissions:
- (a) methane emissions occurring at the coal mine during the mining process;
 - (b) methane emissions occurring during post-mining activities and within the area of the mine.

Article 20

Monitoring and reporting

1. For underground coal mines, mine operators shall perform continuous source level direct measurement and quantification on all exhaust ventilation shafts. Mine operators shall report to the competent authorities methane releases per ventilation shaft per year in kt of methane, using equipment and methodologies resulting in a measurement accuracy with a tolerance of 0,5 kt/year of methane or of 5% of the reported amount whichever value is lower.
2. Drainage stations operators shall perform continuous source level direct emissions measurements and quantification of total releases of vented and flared methane, regardless of the reasons for such venting and flaring activity.
3. As regards surface coal mines, mine operators shall use deposit-specific coal mine methane emission factors to quantify emissions resulting from mining operations. Mine operators shall establish those emission factors on a quarterly basis, in accordance with appropriate scientific standards and take into account methane emissions from surrounding strata.

4. The measurements and quantification referred to in paragraphs 1 to 3 shall be undertaken in accordance with the applicable standards or technical prescriptions established pursuant to Article 29a. Until such a date when standards or technical prescriptions referred to in Article 29a come into application, mine operators shall follow state of the art industry practices and best available technologies for methane emissions measurement and quantification. Operators and undertakings, as applicable, shall provide competent authorities and verifiers with information on the standards, including international standards, or methodologies used.

As regards continuous source level direct measurements and quantification referred to in paragraphs 1 and 2, where part of the measuring equipment is not operating for a period, readings taken during periods when the equipment was operating may be used to estimate data on a pro rata basis for the period that the equipment was not operating.

The equipment used for continuous source level direct measurements and quantification referred to in paragraphs 1 and 2 shall operate for more than 90% of the period for which it is used to monitor the emissions, excluding downtime taken for re-calibration and repairs.

5. Where relevant, mine operators shall estimate coal post-mining emissions using coal post-mining emission factors, updated annually, based on deposit-specific coal samples and in accordance with appropriate scientific standards.
6. By [12 months from the date of entry into force of this Regulation] and by 31 May every year thereafter, mine operators and drainage station operators shall submit a report to the competent authorities containing yearly source-level methane emissions data in accordance with the provisions of this Article.

The report shall cover the last available calendar year period and include the elements set out in Part 1 of Annex V for operating underground coal mines, Part 2 of Annex V for operating surface coal mines and Part 3 of Annex V for drainage stations.

Before submission to the competent authorities, mine operators and drainage station 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.

7. The competent authorities shall make the reports set out in this Article available to the public and the Commission, within three months from submission by operators and in accordance with Article 5(4).

Section II

mitigation of methane emissions from operating underground coal mines

Article 21

Scope

This Section applies to the methane emissions from underground coal mines referred to in Article 19(2).

Article 22

Mitigation measures

1. Flaring with a destruction and removal design efficiency below 99% and venting of methane from drainage systems shall be prohibited from 1 January 2025, except in the case of an emergency, a malfunction or where unavoidable and strictly necessary for maintenance and venting in accordance with paragraph 2. In such cases, drainage station operators shall vent only if flaring is not technically feasible or risks endangering safety of operations or personnel. In such a situation, as part of the reporting obligations set out in Article 23, drainage station operators shall demonstrate to the competent authorities the necessity to opt for venting instead of flaring.

2. Venting of methane through ventilation shafts in coal mines emitting more than five tonnes of methane/kilotonne of coal mined, other than coking coalmines, shall be prohibited from 1 January 2027 , except in the case of an emergency. Venting of methane through ventilation shafts in coal mines emitting more than three tonnes of methane/kilotonne of coal mined, other than coking coal mines, shall be prohibited from 1 January 2031 except in the case of an emergency. These thresholds shall apply per year per mine and per operator, if one entity operates several mines. Any measures taken in accordance with this paragraph shall not lead to the deterioration of the safety of workers.
3. By ...[three years from the date of entry into force of this Regulation] the Commission shall adopt a delegated act in accordance with Article 31 to supplement this Regulation by setting out restrictions on venting methane from ventilation shafts for coking coal mines.
 - 3a. Without prejudice to the application of Articles 107 and 108 of the TFUE, Member States may use systems of incentives to reduce methane emissions based on fees, charges or penalties as referred to in Article 30 in order to guarantee the compliance of operators of existing mines with the obligations in paragraphs 1 and 2 of this Article.

Article 23

Reporting of venting and flaring events

1. From 1 January 2025, drainage station operators shall notify the competent authorities of all venting events and flaring events with a destruction and removal design efficiency below 99%:
 - (a) caused by an emergency or a malfunction,
 - (b) occurring unavoidably due to maintenance of the drainage system.

That notification shall be made without delay after the event and at the latest within 48 hours from the start of event or the moment the operator became aware of it, in accordance with the elements set out in Annex VI.

2. The competent authorities shall make the information submitted to them pursuant to this Article available to the public and the Commission annually and in accordance with Article 5(4).

Section III

methane emissions from closed underground coal mines and abandoned underground coal mines

Article 24

Scope

This Section applies to the following methane emissions from closed underground coal mines and abandoned underground coal mines where coal production has been discontinued since 70 years prior to the date of entry into force of this Regulation:

- (a) methane emissions from all ventilation shafts which continue emitting methane;
- (b) methane emissions from coal mining equipment, use of which has been discontinued;
- (c) methane emissions from other well-defined point emission sources as outlined in Part 1 of Annex VII.

Article 25

Monitoring and reporting

1. By 12 months from the date of entry into force of this Regulation Member States shall set up and make publicly available an inventory of all closed underground coal mines and abandoned underground coal mines in their territory or under their jurisdiction where operations have ceased since 70 years prior to the date of entry into force of this Regulation, in accordance with the methodology and including at least the elements set out in Part 1 of Annex VII.

2. From 21 months from the date of entry into force of this Regulation, methane emissions shall be measured in all closed underground coal mines and abandoned underground coal mines where operations have ceased since 70 years prior to the date of entry into force of this Regulation. Measurement equipment shall be installed on all elements listed in point (v) of Part 1 of Annex VII which were found to emit above 0,5 tonnes of methane per year based on the inventory in Paragraph 1. The equipment shall perform source level direct measurement or quantification taken in accordance with the applicable standards or technical prescriptions established pursuant to Article 29a and at least on an hourly basis and of sufficient quality to allow for a representative estimation of yearly methane emissions from all elements listed in part 1(vi) of Annex VII which were found to emit methane. Until such a date when standards or technical prescriptions referred to in Article 29a come into application, mine operators shall follow state of the art industry practices and best available technologies for methane emissions measurement and quantification. Operators and undertakings, as applicable, shall provide competent authorities and verifiers with information on the standards, including international standards, or methodologies used.

The measurement equipment must operate for more than 90% of the period for which it is used to monitor the emissions, excluding downtime taken for re-calibration and repair.

- 2a. If the observed annual methane release of an element listed in Part 1, point (v) of Annex VII is below 1 tonne of methane for six consecutive years in the case of flooded mines or twelve consecutive years in the case of dry mines, no further monitoring and reporting shall be taken for that specific element.
- 2b. Upon request from the responsible parties, competent authorities may exempt closed underground coal mines and abandoned underground coal mines from the application of paragraphs 2 and 2a of this Article and point (v) of Part 1 of Annex VII where the responsible parties demonstrate that said mines have been fully flooded for at least 10 years from the date of application of the exemption request. Such a request shall be accompanied by a report from the responsible parties. These reports shall demonstrate the stabilization of the hydrogeological conditions as well as the absence of material methane emission in the said mines. The competent authorities shall make the report publicly available in accordance with the national legislation.

- 2c. Where the competent authorities receive reliable evidence of material methane emissions in a closed underground coal mine or abandoned underground coal mine falling under the provisions of paragraph 2b of this Article, the obligations set out in paragraphs 2 and 2a of this Article shall apply to that mine.
3. Reports containing estimates of yearly source-level methane emissions data shall be submitted to the competent authorities by ... 24 months of after the date of entry into force of this Regulation and by 31 May every year thereafter.

The reports shall cover the last available calendar year and include the elements set out in Part 2 of Annex VII.

Before submission to the competent authorities, the reports set out in this paragraph shall be assessed by a verifier and include a verification statement issued in accordance with Articles 8 and 9.

4. Mine operators or Member States shall be responsible for the requirements referred to in paragraphs 2, 2a, 2b, 2c and 3 as regards closed mines. Member States shall be responsible for the requirements referred to in paragraphs 2, 2a, 2b, 2c and 3 as regards abandoned mines. In case of alternative uses of abandoned mines, the permit holder shall be responsible for the requirements referred to in paragraphs 2, 2a and 3.
5. The competent authorities shall make the reports set out in this Article available to the public and the Commission, within three months from submission by operators and in accordance with Article 5(4).

Article 26

Mitigation measures

1. On the basis of the inventory referred to in Article 25, Member States shall develop and implement a mitigation plan to address methane emissions from closed underground coal mines and abandoned underground coal mines where operations have ceased since 70 years prior to the date of entry into force of this Regulation.

The mitigation plan shall be submitted to competent authorities by 30 months from the date of entry into force of this Regulation and include key milestones for its implementation and at least the elements set out in Part 3 of Annex VII.

2. Venting and flaring from equipment referred to in Article 25(2) shall be prohibited from 1 January 2030, unless utilisation or mitigation is not technically feasible or risks endangering environmental safety, human safety, including that of the personnel, or public health. In such a situation, as part of the reporting obligations set out in Article 25, mine operators or Member States shall demonstrate the necessity to opt for venting or flaring instead of utilisation or mitigation
- 3 Alternative use of abandoned coal mines shall be allowed following a permitting procedure adapted to the specific reuse of the abandoned coal mine. The permit applicant shall provide a detailed plan of measures to avoid methane emissions to competent authorities. The permit holder shall comply with the monitoring, reporting and mitigation obligations under Article 25 and Article 26.
- 3a. Without prejudice of the applicable sectoral EU legislation, for closed coal mines, existing best mitigation practices to reduce methane emissions shall be allowed.

Chapter 5

Chapter 5 Methane emissions of crude oil, natural gas and coal placed on the Union market

Article 27

Importer requirements

1. By [9 months from the date of entry into force of the Regulation] and by 31 May every year thereafter, importers shall provide the information set out in Annex VIII to the competent authorities of the Member State in which they are established. Where importers fail to provide the information set out in Annex VIII, in whole or in part, they shall provide sound justification to the competent authorities of the Member State in which they are established explaining such failure and list actions they have undertaken to obtain it.

The Commission is empowered to adopt delegated acts in accordance with Article 31 to amend this Regulation by modifying the information to be provided by importers.

2. By [12 months from the date of entry into force of the Regulation] and by 31 August every year thereafter, Member States shall submit to the Commission the information provided to them by importers.

The Commission shall make the information available in accordance with Article 28.

Article 27a

MRV equivalence

1. As of 1 January 2027, importers shall demonstrate, and report in accordance with Article 27(1), to the competent authority of the Member State in which they are established that the contracts concluded or renewed after the entry into force of this Regulation for the supply of crude oil, natural gas or coal produced outside the Union cover solely crude oil, natural gas or coal that is subject to monitoring, reporting and verification measures at the level of the producer that are equivalent to those set out in this Regulation.
2. For contracts concluded before the entry into force of the Regulation for the supply of crude oil, natural gas or coal produced outside the Union, importers shall undertake all reasonable efforts to require that crude oil, natural gas or coal is subject to monitoring, reporting and verification measures at the level of the producer that are equivalent to those set out in this Regulation. Those efforts may include the amendment of those supply contracts. As of 1 January 2027, importers shall annually inform the competent authority of the Member State in which they are established of the results of such efforts, as part of the information to be provided pursuant to in Article 27(1) and, in case of failure, provide sound justification for such failure and list actions they have undertaken to obtain it.

- 2a The Commission shall issue recommendations containing optional model clauses related to the information to be provided for the purpose of paragraphs 1 and 2, guiding importers placing crude oil, natural gas and coal on the Union market in the process of revision or renewing of existing or signing new, contracts for supply of crude oil, natural gas and coal.
- 3 The competent authorities of the Member States shall protect the commercial secrecy of data obtained, in accordance with Union law. The competent authorities shall provide the information received from importers in accordance with this Article to the Commission which shall protect the commercial secrecy thereof, in accordance with Union law.
- 4 For the purposes of this Article, monitoring, reporting and verification measures shall be treated as equivalent in the following cases:
- a) for crude oil and natural gas, the producer established in a third country applies monitoring and reporting measures capable of delivering quantification of methane emissions equivalent to those set out in Article 12 or monitoring and reporting at OGMP 2.0 level 5, and, for coal, equivalent to those set out in Article 20, and provided that crude oil, natural gas and coal, are subject to independent third party verification equivalent to that set out in Articles 8 and 9;
 - b) the third country adopted and implements on its territory a regulatory framework on monitoring, reporting and verification requirements that is at least equivalent to that applied in the Union and which applies to producers and exporters established therein and supplying crude oil and natural gas or coal to the Union market. In particular, the third country shall demonstrate that monitoring and reporting requirements ensure at least source and site level quantification and regular reporting equivalent to those set out in Article 12, for crude oil and natural gas, and Article 20, for coal, while it shall demonstrate an effective verification by an independent third-party, equivalent to that set out in Articles 8 and 9, as well as effective supervision and enforcement.

5. For the purpose of paragraph 4, b), the procedure and, requirements concerning evidence to be provided by any third country for establishing equivalence shall be laid down by the Commission in an implementing act of general application. This implementing act shall be adopted in accordance with the procedure referred to in Article 32(3).

The process of establishing equivalence may be initiated on request of a third country or by the Commission, The Commission shall actively engage with all third countries exporting crude oil, natural gas or coal to the Union market to obtain their agreement to launch such a process, taking into account the quantity imported from these third countries and their methane emission abatement potential.

Equivalence shall be established by the Commission by way of implementing acts of individual application to each third country, only when the third country fulfils all the conditions set out in paragraph 4, b) of this Article and all evidence set out in the implementing act of general application is provided. These implementing acts shall be adopted in accordance with the procedure referred to in Article 32(3). The Commission shall refrain from adopting such implementing acts where this would circumvent measures adopted under Article 215 of the Treaty on the Functioning of the EU restricting the import of crude oil, natural gas and coal.

The equivalence may be revoked at any time by the Commission by means of an implementing act of individual application if the third country no longer complies, in law or in practice, with the criteria for equivalence during a period of at least 12 months. Prior to adopting the implementing act on withdrawal of equivalence, the Commission shall notify the third country of its concerns and give it an opportunity to state its views. When preparing such implementing acts, the Commission shall inform the Oil Coordination Group, the Gas Coordination Group and the Electricity Coordination Group, and relevant stakeholders. The implementing act withdrawing equivalence shall enter into force not earlier than 30 calendar days following the date of adoption.

6. As of [the date of the entry into force of this Regulation], where appropriate and subject to the applicable procedures the Union shall propose and aim to enter into cooperation frameworks with third countries from which it imports crude oil, natural gas or coal to support them in establishing a monitoring, reporting and verification system equivalent to that established in this Regulation. The Commission shall not recommend entering into such cooperation frameworks where this would circumvent measures adopted under Article 215 of the Treaty on the Functioning of the EU restricting the import of crude oil, natural gas and coal.
7. Importers shall be exempt from the reporting obligations set out in paragraphs 1 and 2 provided that they import crude oil, natural gas or coal from a third country for which the equivalence of its monitoring, reporting and verification system of methane emissions has been established in accordance with paragraph 5.

Article 27b

Methane intensity associated to crude oil, natural gas and coal

1. By [three years after the date of entry into force of the Regulation], the Commission shall adopt a delegated act setting out a methodology for calculating, at the level of the producer, the methane intensity associated to crude oil, natural gas and coal placed on the Union market. The methodology shall consider the different production processes and site conditions for the production of crude oil, natural gas and coal, and shall take into account existing international methodologies and best practice for calculating methane intensity. The methodology shall be non-discriminatory, based on transparent and objective criteria. When preparing such delegated acts, the Commission shall inform the Oil Coordination Group, the Gas Coordination Group and the Electricity Coordination Group, and relevant stakeholders.

2. By ... [four years after the date of entry into force of the Regulation], for the supply contracts concluded or renewed after the entry into force of this Regulation, Union producers and, pursuant to article 27(1), importers shall report annually to the competent authority of the Member State in which they are established the methane intensity associated to the production of crude oil, natural gas and coal placed on the Union market according to the methodology set out pursuant to paragraph 1.

For the supply contracts concluded before the entry into force of this Regulation, Union producers and, pursuant to article 27(1), importers shall undertake all reasonable efforts to report to the competent authority of the Member State in which they are established the methane intensity associated to the production of crude oil, natural gas and coal placed in the Union market in accordance with the methodology established pursuant to paragraph 1. As of [four years after the date of entry into force of the Regulation], Union producers and importers placing crude oil, natural gas or coal on the Union market shall report annually to the competent authority of the Member State in which they are established of the results of such efforts.

- 2a By ... [six years after the date of entry into force of the Regulation], Union producers and importers placing crude oil, natural gas and coal on the Union market under the supply contracts concluded or renewed after [six years after the date of entry into force] shall demonstrate to the competent authorities of the Member State in which they are established that the methane intensity associated to the crude oil, natural gas and coal they placed on the Union market, calculated pursuant to the methodology referred to in paragraph 1, is below the maximum methane intensity values established to promote the global methane emissions reductions for these goods.

- 2b. By ... [five years after the date of entry into force of the Regulation], the Commission shall assess the potential impact of various levels of maximum methane intensity values associated to crude oil, natural gas and coal placed on the Union market at the level of the producer, and present a report to the European Parliament and the Council. The report shall include an assessment of the potential global methane emissions reductions, as well as the impacts on security of energy supply at national and EU level, the impacts on competitiveness of the Union's economy, and potential global and regional market distortions. The report shall include a market assessment of the methane intensity of supplies to the EU and future supplies until 2049 through both long-term contracts and spot purchases. The assessment shall analyse the situation per Member State, taking into account contractual commitments entered into before the entry into force of this regulation and energy infrastructure capacities and potential constraints.
- 2c. On the basis of the assessment referred to in paragraph 2b, the Commission shall adopt delegated acts supplementing this regulation in accordance with Article 31 by setting out the maximum methane intensity values associated to the crude oil, natural gas and coal placed on the Union market at the level of the producer, based on objective criteria. The delegated acts shall be consistent with the methodology for calculating the methane intensity associated to crude oil, natural gas and coal placed on the Union market referred to in paragraph 1. The delegated acts shall also identify different methane intensity classes for crude oil, natural gas and coal. The maximum methane intensity values shall be determined separately for crude oil, natural gas and coal, covering the best performing class or classes identified. The maximum methane intensity values and the methane intensity classes shall take into account the different sources, production processes and site conditions for the production of crude oil, natural gas and coal and shall be set at levels that promote the global methane emissions reductions in relation to the crude oil, natural gas and coal placed on the Union market, while preserving the security of energy supply at national and Union level, including a balanced distribution of volumes placed on the Union market, while ensuring non discriminatory treatment and protecting the competitiveness of the Union's economy.

3. The competent authorities of the Member States shall protect the commercial secrecy of data obtained, in accordance with Union law. The competent authorities shall provide the information received from importers and Union producers in accordance with this Article to the Commission, which shall protect the commercial secrecy thereof, in accordance with Union law.

Article 28

Methane transparency database and methane performance profiles

1. By [18 months after the date of entry into force of the Regulation] the Commission shall establish and maintain a methane transparency database, including at least data on Member States and third countries, undertakings, importers and quantities of natural gas, coal and crude oil placed on the Union market, containing the information submitted to it pursuant to Articles 12(11), 18(4), 20(7), 23(2), 25(5), 27 (2), 27a (3) and 27b (3).
2. In addition to the information referred to in paragraph 1, the database shall at least include the following information:
- (a) a list of countries where natural gas, coal and crude oil is produced and exported to the Union;
 - (b) for each Member State and third country referred in point (a) information about the following points:
 - (i) whether it has mandatory regulatory measures in place on energy sector methane emissions, covering the elements set out in this Regulation regarding measurement, reporting, verification and mitigation of energy sector methane emissions, notably restrictions on routine venting and flaring;
 - (ii) whether it has signed the Paris Agreement on climate change and the Global Methane Pledge;

- (iii) whether it is delivering national inventories in accordance with the requirements of the United Nations Framework Convention on Climate Change, where applicable;
- (iv) whether the national inventories submitted pursuant to the United Nations Framework Convention on Climate Change include tier 3 reporting of energy methane emissions, where applicable and specifying which methane emissions categories are reported at tier 3;
- (v) the amount of energy sector methane emissions according to the national inventories submitted pursuant to the United Nations Framework Convention on Climate Change, where applicable, and whether the data was subject to independent verification.
- (vi) for each third country listed, the list of producers or exporters of natural gas, coal and crude oil into the Union, as applicable, and whether they are part of any global methane reduction initiatives, notably the Oil and Gas Methane Partnership and the Zero Routine Flaring Initiative;
- (vii) for each Member State, a list of importers placing natural gas, coal and crude oil on the Union market;
- (viia) where available, electronic links to national data sources reporting on methane emissions in the energy sector
- (viib) for each third country listed, indicative values estimating the methane emissions related to the transport of natural gas, crude oil and coal.

The methane transparency database shall serve as an information tool available to the public, free of charge.

The methane transparency database shall indicate where the quality and reliability of information submitted has been verified by independent third-parties.

- 2a By [24 months after the date of entry into force of the Regulation], on the basis of the data and information available and collected up to that point in the methane transparency database, the Commission shall publish the methane performance profiles of Member States, of Union producers or importers, as applicable, which place crude oil, natural gas or coal on the union market and of third countries and third country producers or exporters, as applicable, from which crude oil, natural gas and coal is imported into the Union.
- 2b The methane performance profiles shall be updated annually and shall contain, at least and as applicable:
- (a) methane emissions related to crude oil, natural gas and coal placed on the Union market and a data quality assessment for reported methane emissions, including the level of OGMP 2.0 reporting, where relevant;
 - (b) an assessment of the efforts undertaken on methane emissions monitoring, reporting and abatement by Union producers or importers, as applicable, as well a by third country producers or exporters, as applicable, placing crude oil, natural gas or coal on the Union market, including by region where relevant;
 - (c) analysis of super emitting events that occurred in Member States and third countries from which the Union imports crude oil, natural gas or coal and how these were addressed.
3. The methane performance profiles shall be available to the public online, free of charge.
4. This Article shall apply without prejudice to the provisions of Directive (EU) 2016/943.

Article 29

Methane emitters global monitoring tool and rapid reaction mechanism

1. By ... [two years after the date of entry into force of the Regulation], the Commission shall establish a global methane monitoring tool based on satellite data and input from several certified data providers and services, including the Copernicus component of the EU Space Programme. For this purpose, the Commission may use existing available international tools or frameworks.

The tool shall be made available to the public and provide regular updates at least on the magnitude, recurrence and location of high methane-emitting sources of energy occurring within or outside the Union.

2. By ... [18 months after the date of entry into force of the Regulation], the Commission shall establish a rapid reaction mechanism to detect and to address super emitting events.

For this purpose, the Commission shall, as appropriate, promptly notify the detection of a super emitting event to the Member State or third country under whose jurisdiction the event has taken place. Where feasible, the Commission shall also notify the producer related to the source or set of connected sources emitting methane. The notification shall include a request to promptly provide additional information on the super emitting event and the remedial measures taken or planned to be taken, to mitigate the consequences or stop the event, including the timeframe within which the remedial measures are to take place. The Commission shall undertake all necessary contacts in order to obtain and verify information received in connection with the event, including, where applicable, in cooperation with competent international organisations. For this purpose, the Commission may use existing available international tools or frameworks.

3. The Commission shall propose to establish on the Union's behalf bilateral dialogues with third countries supplying crude oil, natural gas and coal to the Union with the aim to set up a framework for an information exchange and an early warning system to detect and alert each other of the presence of super emitting events and remedial measures taken or to be taken in order to prevent from occurring or stop such events. The dialogues shall also aim to identify ways to accelerate the abatement of methane emissions in the energy sector and, if needed, may offer an exchange of best practices and advice to set up monitoring, reporting, verification and abatement measures equivalent to ones established in this Regulation. The Commission shall not propose to establish bilateral dialogues with third countries where this would circumvent measures adopted under Article 215 of the Treaty on the Functioning of the EU restricting the import of crude oil, natural gas and coal.

- 3a. Based on the monitoring carried out in the context of the dialogues referred to in paragraphs 2 and 3, the Commission shall keep the Council and the European Parliament informed about the notifications of super emitting events and about the implementation of the remedial measures in the Union and in third countries from which the Union imports crude oil, natural gas or coal and any potential impact on the security of energy supply at national and EU level.
- 3b. This Article shall apply without prejudice to the provisions of Directive (EU) 2016/943.

Chapter 6

Final provisions

Article 29a

Standards and technical prescriptions

1. The Commission shall, as provided in Article 10(1) to (5) of Regulation (EU) 1025/2012, request one or more European standardisation organisations to draft harmonised standards for: a) measurement and quantification of methane emissions referred to in Article 12(7); b) leak detection and repair surveys referred to in Article 14(1); c) equipment referred to in Article 15(3); d) quantification of methane emissions referred to in Article 18(2); e) measurement and quantification of methane emissions referred to in Articles 20(4) and 25(2).

Upon reception of a standard by a European standardisation organisation, the Commission shall assess its conformity with the relevant standardisation requests, with this Regulation and with other Union law, as relevant. The Commission is empowered to adopt delegated acts in accordance with Article 31 to supplement this Regulation establishing mandatory standards, or parts thereof, referred to in paragraph 1 and this paragraph for the purposes of this Regulation.

2. The Commission is empowered to adopt delegated acts in accordance with Article 31 to supplement this Regulation by establishing mandatory technical prescriptions, or parts thereof, for the purposes of: a) measurement and quantification of methane emissions referred to in Article 12(7); b) leak detection and repair surveys referred to in Article 14(1); c) equipment referred to in Article 15(3); d) quantification of methane emissions referred to in Article 18(2); e) measurement and quantification of methane emissions referred to in Articles 20(4) and 25(2).

The Commission may adopt those delegated acts only where it has issued a standardisation request to one or more European standardisation organisations and: a) the request has not been accepted; or b) the standards addressing that request are not delivered within the applicable timeframe; or c) the standards developed by the European standardisation organisations do not comply with the request; or d) the standards developed by the European standardisation organisation are considered to be insufficient to cover the requirements of this Regulation, in full or in part; and provided no delegated act has been adopted in accordance with paragraph 1.

Article 30

Penalties

1. Member States shall lay down the rules on penalties applicable to infringements of the provisions of this Regulation and shall take all measures necessary to ensure that they are implemented.
2. The penalties provided for must be effective, proportionate and dissuasive and shall include at least:
 - (a) fines proportionate to the environmental damage and impact on human safety and public health, calculating the level of such fines in such way as to make sure that they at least effectively deprive those responsible of the economic benefits derived from their infringements and gradually increasing the level of such fines for repeated serious infringements;

- (b) periodic penalty payments to compel operators, mine operators, undertakings or importers to put an end to an infringement, comply with a decision ordering remedial actions or corrective measures, supply information or submit to an inspection, as applicable.

Member States shall notify the rules on penalties to the Commission by [12 months from the date of entry into force of the Regulation]. In addition, Member States shall notify any subsequent amendment affecting such rules to the Commission without delay.

2a. Member States shall, in accordance with national law, ensure that the competent authorities have the power to impose at least the following administrative penalties and administrative measures relating to breaches of Articles 12, 14(7), 16(2), 20, 23(1), 27(1), 27a(1) and (2) and 27b(2) and (2a) , provided that they do not endanger the security of energy supply:

- (a) adopt a decision requiring the person to bring the breach to an end;
- (b) the disgorgement of the profits gained or losses avoided due to the breaches insofar as they can be determined;
- (c) issue public warnings or notices;
- (d) adopt a decision imposing periodic penalty payments;
- (e) adopt a decision imposing administrative fines.

The amount of the fine shall not exceed 20 % of the annual turnover of the legal person concerned in the preceding business year. In the case of natural persons, the amount of the fine shall not exceed 20 % of the yearly income in the preceding calendar year.

2aa. Where the legal system of the Member State does not provide for administrative fines, this Article may be applied in such a manner that the fining procedure is initiated by the competent authority and imposed by competent national court, while ensuring that those legal remedies are effective and have equivalent effect to the administrative fines imposed by supervisory authorities. In any event, the fines imposed shall be effective, proportionate and dissuasive.

- 2b. In the exercise of their powers to impose administrative fines and other administrative measures under this Article, competent authorities shall cooperate closely to ensure that the exercise of their powers, and the fines that they impose, and any other measures that they take, are effective and consistently designed and applied in the Union.
3. At least the following infringements shall be subject to penalties:
- (a) failure of operators, mine operators, undertakings or importers to provide the competent authorities or the verifiers with the assistance necessary to enable or facilitate the performance of their tasks in accordance with this Regulation;
 - (b) failure of operators or mine operators to carry out the actions set out in the inspections report referred to in Article 6(5) and (7);
 - (c) failure of operators or mine operators to submit the methane emissions reports as required by Articles 12, 18(2), 20 and 25(3) of this Regulation, including the verification statement issued by independent verifiers in accordance with Articles 8(3);
 - (d) failure of operators to submit a leak detection and repair programme in accordance with Article 14(1) or carry out a leak detection and repair survey in accordance with Article 14(2), (2aa) and (3a);
 - (e) failure of operators to repair or replace components, to continuous survey components and to record leaks in accordance with Article 14(4), (4a), (4b), (4c), (5) and (6);
 - (f) failure of operators to submit a report in accordance with Article 14(7);
 - (g) venting or flaring by operators or mine operators beyond the situations provided for in Articles 15(2) and (3), 22(1) and (2) and 26(2), as applicable;
 - (h) routine flaring by operators;

- (i) failure of operators or mine operators to demonstrate the necessity to opt for venting instead of flaring and to demonstrate the necessity to opt for flaring instead of either re-injection, utilisation on-site or dispatch of the methane to a market, in the case of operators, or utilisation or mitigation, in the case of mine operators, in accordance with Articles 15(4) and (5), 22(1) and (2) and 26(2);
 - (ii) failure of operators to replace or utilise venting equipment in accordance with Articles 15(4a) and (5a);
 - (j) failure of operators or mine operators to notify or report on venting and flaring events in accordance with Articles 16(1) and (2), 23(1) and 26, as applicable
 - (k) use of flare stacks or combustion devices in breach of the requirements laid down in Articles 17, 22 and 23;
 - (ka) failure of the responsible party to apply the mitigation measures in accordance with Article 18(3b) and (6);
 - (l) failure of importers to provide the information required in accordance with Article 27(1) and Annex VIII.
 - (m) failure of importers to provide the information required in accordance with Article 27a(1) and (2);
 - (n) failure of Union producers or importers to provide the information required in accordance with Article 27b(2) and (2a);
 - (o) failure of Union producers or importers to comply with the methane intensity values set in accordance with Article 27b(2a).
- 3a. Where the conditions set out in Article 15(5c) are fulfilled, Member States shall consider reducing or not imposing penalties on operators for the implementation period deemed necessary by the national authorities.
4. Member States shall take into account at least the following indicative criteria for the imposition of penalties, as appropriate:

- (a) the duration or temporal effects, the nature and the gravity of the infringement;
- (b) any action taken by the undertaking, importer, operator or mine operator to timely mitigate or remedy the damage;
- (c) the intentional or negligent character of the infringement;
- (d) any previous or multiple infringements by the undertaking, importer, operator or mine operator;
- (e) the financial benefits gained or losses avoided directly or indirectly by the undertaking, operator or mine operator due to the infringement, if the relevant data are available;
- (f) the size of the undertaking, importer, operator or mine operator;
- (g) the degree of cooperation with *the* authorities;
- (h) the manner in which the infringement became known to the authorities, in particular whether, and if so to what extent, the operators, mine operators, undertakings or importers timely notified the infringement;
- (i) any other aggravating or mitigating factor applicable to the circumstances of the case, including third party actions.

5. Member States shall publish annually information on the type and the size of the penalties imposed under this Regulation the infringements and the operators, mine operators, undertakings or importers upon which penalties have been imposed. Where applicable, such information shall be reported in accordance with Article 21 of [revised Directive 2008/99/EC].

Article 31

Exercise of the delegation

1. The power to adopt delegated acts is conferred on the Commission subject to the conditions laid down in this Article.
2. The power to adopt delegated acts referred to in Articles 22(3), 27(1), 27b(1) and (2c) and 29a shall be conferred on the Commission for a period of five years from [the date of entry into force of the Regulation] to be tacitly extended for periods of an identical duration.
3. The delegation of power referred to in Articles 8(5), 22(3) and 27(1) may be revoked at any time by the European Parliament or by the Council. A decision to revoke shall put an end to the delegation of the power specified in that decision. It shall take effect the day following the publication of the decision in the Official Journal of the European Union or at a later date specified therein. It shall not affect the validity of any delegated acts already in force.
4. Before adopting a delegated act, the Commission shall consult experts designated by each Member State in accordance with the principles laid down in the Interinstitutional Agreement on Better Law-Making of 13 April 2016.
5. As soon as it adopts a delegated act, the Commission shall notify it simultaneously to the European Parliament and to the Council.
6. A delegated act adopted pursuant to Articles 22(3), 27(1), 27b(1) and (2c) and 29a shall enter into force only if no objection has been expressed either by the European Parliament or by the Council within a period of two months of notification of that act to the European Parliament and the Council or if, before the expiry of that period, the European Parliament and the Council have both informed the Commission that they will not object. That period shall be extended by two months at the initiative of the European Parliament or of the Council.

Article 32

Committee procedure

1. The Commission shall be assisted by the Energy Union Committee established by Article 44 of Regulation (EU) 2018/1999.
2. Where reference is made to this paragraph, Article 4 of Regulation (EU) No 182/2011 shall apply.
3. Where reference is made to this paragraph, Article 5 of Regulation (EU) No 182/2011 shall apply.

Article 33

Commission monitoring, review and reports

1. The Commission shall monitor and review the application of this Regulation and submit, by 1 January 2028 and every 5 years thereafter, a report to the European Parliament and to the Council.
2. The first report referred to in paragraph 1 shall in particular review the following:
 - a. The effectiveness and efficiency of this Regulation in establishing transparent and accurate measurement, reporting and verification rules and in reducing methane emissions in connection with crude oil, natural gas and coal placed on the Union market;
 - b. If feasible, the achieved level of abatement of methane emissions in connection with crude oil, natural gas and coal placed on the Union market as a result of this Regulation;
 - c. Whether additional or alternative measures are necessary to foster and accelerate the abatement of methane emissions in the value chain of crude oil, natural gas and coal placed on the Union market to support the Union's net zero target for greenhouse gas emissions by 2050 and its Paris Agreement commitments.

This review shall take into account the relevant Union legislation in related fields. The Commission, where appropriate, shall submit a legislative proposal together with its report, taking into account the relevant Union legislation in related fields.

2. For the purpose of this Article, the Commission may request information from Member States and competent authorities and shall take into account notably the information provided by Member States in their integrated National Energy and Climate Plans, updates thereof and in their National Energy and Climate progress reports pursuant to Regulation (EU) 2018/1999.

Article 34

Amendments to Regulation (EU) 2019/942

In Article 15 of Regulation (EU) 2019/942 of the European Parliament and of the Council the following paragraph 5 is added:

- “5. Every three years ACER, after consulting Member States shall establish and make publicly available a set of indicators and corresponding reference values for the comparison of unit investment costs linked to measurement, quantification, monitoring, reporting, verification and abatement, including venting and flaring of methane emissions for comparable projects. It shall issue recommendations on indicators and reference values for unit investment costs for complying with the obligations under [this Regulation] pursuant to Article 3 of [this Regulation].”

Article 35

Entry into force

This Regulation shall enter into force on the twentieth day following that of its publication in the Official Journal of the European Union.

This Regulation shall be binding in its entirety and directly applicable in all Member States.

Done at Brussels,

For the European Parliament

The President

For the Council

The President

Annex I

Leak detection and repair surveys

1. For all aboveground and underground components, excluding transmission and distribution networks leak detection and repair surveys as set out in Article 14 shall be carried-out as per the following minimum frequencies:

Type of LDAR survey	Type of component	Frequency
Type 1 LDAR survey	Compressor station	4 months
	Underground storage	
	LNG-Terminal	
	Regulating and metering station	
	Valve station	9 months
Type 2 LDAR survey	Compressor station	8 months
	Underground storage	
	LNG-Terminal	
	Regulating and metering station	
	Valve station	18 months

Type of LDAR survey	Type of material	Frequency of survey
Type 1 LDAR survey	Bitumen sheet	3 months
	Grey cast iron	
	Asbestos	6 months
	Ductile cast iron	
	Non-protected steel	9 months
	Copper	
	Polyethylene	15 months
	PVC	
	Protected steel	

Type 2 LDAR survey	Bitumen sheet Grey cast iron	6 months
	Asbestos Ductile cast iron	12 months
	Non-protected steel Polyethylene PVC Copper	18 months
	Protected steel	30 months

When the type of material cannot be determined, the highest frequency survey for the respective LDAR survey type shall be used.

- For all components of transmission and distribution networks, leak detection and repair surveys as set out in Article 14 shall be carried-out as per the following minimum frequencies:

<u>Type of LDAR survey</u>	<u>Type of component</u>	<u>Frequency of survey</u>
Type 1 LDAR survey (design pressure > 16 bar)	Compressor station Regulating and metering station	4 months
	Valve station	9 months
Type 2 LDAR survey (design pressure > 16 bar)	Compressor station Regulating and metering station	8 months
	Valve station	18 months
Type 2 LDAR survey (design pressure ≤ 16 bar)	Regulating and metering station	9 months
	Valve station	21 months

Type of LDAR survey	Type of material	Frequency of survey
Type 1 LDAR survey (design pressure > 16 bar)	Grey cast iron	3 months
	Bitumen sheet	
	Asbestos	6 months
	Ductile cast iron	
	Non-protected steel	12 months
	Copper	
	Polyethylene	24 months
	PVC	
	Protected steel	
Type 2 LDAR survey (design pressure > 16 bar)	Grey cast iron	6 months
	Bitumen sheet	
	Asbestos	12 months
	Ductile cast iron	
	Non-protected steel	24 months
	Copper	
	Polyethylene	36 months
	PVC	
	Protected steel	
Type 2 LDAR survey (design pressure ≤ 16 bar)	Grey cast iron	6 months
	Bitumen sheet	
	Asbestos	12 months
	Ductile cast iron	
	Non-protected steel	24 months
	Copper	
	Polyethylene	36 months
	PVC	
	Protected steel	

When the type of material cannot be determined, the highest frequency survey for the respective LDAR survey type shall be used. LDAR surveys may be carried out using a two-step approach: first from distance and in case a leak is detected with a second detection as close as possible to the source.

For underground and below the sea level protected steel pipelines with pressure above 16 bar, operators shall also perform risk-based preventive pipeline integrity management to prevent any leakage in accordance with relevant European standards or national pipeline integrity management legislation. This shall include constant monitoring of flow, fluid composition, pressure and temperature of the gas transported in the system to ensure that they are within the pipeline integrity specifications and to estimate and locate potential methane emissions. Taking into account results of that preventive pipeline integrity management, the competent authority may approve different frequency of up to 36 months for Type 1 LDAR survey and 48 months for Type 2 LDAR survey.

3. For all offshore components, leak detection and repair surveys as set out in Article 14 shall be carried-out as per the following minimum frequency:

Type of LDAR survey		Frequency of survey
Type 1 LDAR survey	Offshore components above the sea level	12 months
	Offshore components below the sea level	24 months
	Offshore components below the seabed	36 months
Type 2 LDAR survey	Offshore components above the sea level	24 months

4. For all other components: type 1 leak detection and repair surveys shall be carried-out every 6 months and type 2 leak detection and repair surveys shall be carried-out every 12 months.

Annex Ia

Leak detection repair and monitoring schedules

Repair schedule

The repair schedule referred to in Article 14 must include at least the following elements:

- (i) Inventory and identification of all components that have been checked
- (ii) Result of inspection in terms of whether methane loss has been detected and, if so, size of loss
- (iii) For components found to be emitting at or above the thresholds set out in Article 14(4), indication of whether repair was undertaken during the LDAR survey and if not why, taking into account the requirements as regards what elements can be taken into account for a delayed repair, as per Article 14, paragraph 4.
- (iv) For components found to be emitting at or above the thresholds set out in Article 14(4), planned repair schedule indicating planned date of repair,
- (v) For components found to be emitting below the thresholds set out in Article 14(4) in previous LDAR survey, but found to be emitting at or above such thresholds during post LDAR monitoring to check whether the size of loss of methane has evolved, indication whether repair was undertaken immediately and if not, why not (as per iii), and planned repair schedule indicating planned date of repair.

This is to be followed by a post repair monitoring schedule to indicate when repairs were effectively carried out.

Monitoring schedule

The monitoring schedule referred to in Article 14 must include at least the following elements:

- (i) Inventory and identification of all components that have been checked
- (ii) Result of inspection in terms of whether methane loss has been detected and, if so, size of loss
- (iii) For components found to be emitting at or above the thresholds set out in Article 14(4) in previous LDAR survey, information about the repair undertaken and results of monitoring after repair to check if repair was successful
- (iv) For components found to be emitting below the thresholds set out in Article 14(4) in the previous LDAR survey, results of post LDAR monitoring to check whether the size of loss of methane has evolved and recommendation on the basis of finding.

Annex II

Reporting of venting and flaring events

Pursuant to Article 16, operators must report to the competent authorities at least the following information regarding methane flared or vented:

- (i) name of the operator;
- (ii) location, name and type of asset;
- (iii) equipment involved;
- (iv) date(s) and time(s) that venting or flaring was discovered or commenced and terminated;
- (v) Quantification of the volume of vented or flared methane;
- (va) destruction and removal efficiency and the type of flare used;
- (vi) cause and nature of venting or flaring;
- (vii) steps taken to limit the duration and magnitude of venting or flaring;
- (viii) corrective actions taken to eliminate the cause and recurrence of venting or flaring;
- (ix) results of inspections to take place once every two weeks of flare stacks and of the remote or automated monitoring systems, as applicable, carried out in accordance with Article 17, in particular, where an irregularity has been identified.
- (x) decision to replace equipment that vents and replacement schedule, where applicable.

Annex III

Flare stack inspections

Inspections of flare stacks or other combustion devices must include a comprehensive Audio, Visual and Olfactory (AVO) inspection (including external visual inspection of flare stacks, listening for pressure and liquid leaks and smelling for unusual and strong odours)

The following observations must be included in the report:

- (i) In the case of lit flares: whether combustion is considered adequate or inadequate. Inadequate combustion being defined as a flare with visible emissions that exceed a total of five minutes during any two consecutive hours. Where flares are equipped with remote or automated monitoring systems, inadequate combustion being defined as a flare with visible emissions that exceed a total of five minutes during any two consecutive hours recorded on a live basis.
- (ii) In the case of unlit flares: whether the unlit flare has a gas vent or not. Where flares are equipped with remote or automated monitoring systems, the emissions are calculated based on the flow rate and methane slip in case there is a gas vent.

Annex IV

Inventories and mitigation plans for inactive wells, temporarily plugged wells, and permanently plugged and abandoned wells

Part 1

1. Pursuant to Article 18, inventories of inactive wells, temporarily plugged wells, and permanently plugged and abandoned wells must include at least the following information:
 - (i) name and address of the operator, owner or licensee, where applicable;
 - (ii) name, type and location of well or well site, specifying whether it is an inactive well, temporarily plugged well, or permanently plugged and abandoned well, as defined in this Regulation;
 - (iii) as feasible, map showing borders of the well or well site;
 - (iv) results of quantification of methane emissions to air and to water carried out.
2. Pursuant to Article 18, inventories of inactive wells, temporarily plugged wells and permanently plugged and abandoned wells may include the following information:
 - (i) Dates for initial drilling and last operation;
 - (ii) Orientation (vertical, horizontal, slant);
 - (iii) Overall depth of well;
 - (iv) Whether any notable events have occurred during the drilling process, such as "kicks";
 - (v) Whether the well has contacted gas containing significant amounts of sulphur compounds (sour gas), or trace amounts (sweet gas);

- (vi) Seismic data available for the well in the upper 1000m of its trajectory with a 1000m radius;
 - (vii) The most recent well integrity assessment report;
 - (viii) Whether the well is an exploration or production well;
 - (ix) Whether the well has contacted any shallow gas pockets, shallow gas zones or loss circulation zones;
 - (x) Whether the well is located onshore (indicate urban, rural, other) or offshore (indicate water depth);
 - (xi) In the case of offshore wells, information regarding any conditions at the sea bed which could assist methane migration up through the water column;
 - (xii) Information on the well's lifecycle status, (active, inactive, downhole plugged, surface decommissioned, etc);
 - (xii) Whether the well cap associated with a decommissioned well is vented or not.
3. Pursuant to Article 18, with respect to permanently plugged and abandoned wells, inventories shall also include:
- (i) the last known measurements or quantification of methane emissions to air and to water, if any;
 - (ii) information showing that the relevant competent authority has attested that the well or well site in question fulfils the criteria set out in Article 2(24a);
 - (iii) documentation adequate to demonstrate that there are no methane emissions from that well or well site, including emission factor based or sample-based quantification or reliable evidence of permanent subsurface isolation in accordance with ISO 16530-1: 1) for all wells permanently plugged and abandoned from 30 years before the entry into force of this Regulation; 2) where available, for all wells permanently plugged and abandoned earlier than 30 years before the entry into force of this Regulation.

Part 2

Pursuant to Article 18, mitigation plans shall include at least the following information:

- (i) the schedule of addressing each inactive well and temporarily plugged well, including the actions to be performed;
- (ii) name and address of the operator, owner or licensee of the inactive well or temporarily plugged well, where applicable;
- (iii) projected end date of all remediation, reclamation or plugging of inactive wells and temporarily plugged wells.

Annex V

Reporting for operating coal mines

Part 1

Pursuant to Articles 19 and 20, the reports for operating underground mines must include at least the following information:

- (i) name and address of the mine operator;
- (ii) mine address;
- (iii) tonnage of each coal type produced by the mine;
- (iv) for all ventilation shafts utilised by the mine
 - 1) name (if any);
 - 2) period of use, if different from the reporting period;
 - 3) coordinates;
 - 4) purpose (intake, exhaust);
 - 5) technical specification of the measurement equipment used for measurement and quantification of methane emissions and optimum operating conditions specified by the producer;
 - 6) proportion of time when continuous measurement equipment was operating;
 - 7) reference to the applicable standards or technical prescriptions for

- methane measurement equipment sampling position;
- measurement of flow rates;
- measurement of methane concentrations;
 - 8) methane emissions registered by the continuous measurement equipment (in tonnes);
 - 9) methane emissions registered through monthly sampling (in tonnes/hour) covering information on;
- sampling date;
- sampling technique;
- readings of atmospheric conditions (pressure, temperature, humidity), taken at an appropriate distance to reflect conditions at which continuous measurement equipment is operating;
 - 10) if mine is joined to another mine by any means allowing for a flux of air between the mines, name of the mine;
- (v) post mining emission factors and description of method employed for their calculation;
- (vi) post-mining emissions (in tonnes).

Part 2

Pursuant to Articles 19 and 20, the reports for operating surface mines must include at least the following information:

- (i) name and address of the mine operator;
- (ii) mine address;

- (iii) tonnage of each coal type produced by the mine;
- (iv) map of all deposits utilised by the mine, outlining borders of these deposits;
- (v) for each coal deposit:
 - 1) name (if any)
 - 2) period of use, if different from the reporting period
 - 3) outline of the experimental method employed to determine methane emissions due to mining activities, including the choice of methodology to account for methane emissions from surrounding strata
- (vi) post mining emission factors and description of method employed for their calculation;
- (vii) post-mining emissions.

Part 3

Pursuant to Articles 19 and 20, the reports for drainage stations must include at least the following information:

- (i) name and address of the mine operator;
- (ii) tonnage of methane supplied by a mine/mines drainage system, per mine;
- (iii) tonnage of methane vented;
- (iv) tonnage of flared methane;
- (v) flare efficiency;
- (vi) use of methane captured.

Annex VI

Reporting of venting and flaring events in drainage stations

Pursuant to Article 23, drainage station operators must report to the competent authorities at least the following information regarding methane flared or vented:

- (i) name and address of the operator;
- (ii) time when the event was first detected;
- (iii) cause of the venting and/or flaring event; justification for using venting instead of flaring, if applicable;
- (iv) tonnage of methane vented and flared (or an estimate if quantification is not possible).

Annex VII

Closed and abandoned mines

Part 1

Pursuant to Article 24 and 25, for each site, the inventory of closed and abandoned coal mines must include at least the following information:

- (i) name and address of the operator, owner or licensee, where applicable;
- (ii) site address;
- (iii) map showing borders of the mine;
- (iv) schemes of mine workings and their status
- (v) results of source level direct methane measurement or quantification at the following point emission sources:
 - 1) all shafts utilised by the mine when operating, accompanied by:
 - shaft coordinates
 - shaft name (if any)
 - sealing status and sealing method, if known
 - 2) unused vent pipes
 - 3) unused gas drainage wells
 - 4) other recorded potential point emission sources.

The measurements referred to in point (v) must be performed in accordance with the following principles:

- (i) measurements must be performed at atmospheric pressure allowing for potential methane leak to be detected, and according to the appropriate scientific standards.
- (ii) measurements must be performed using an equipment resulting in a methane emissions measurement accuracy of at least 0,5 tonnes per year.
- (iii) measurements must be accompanied by an information on:
 - 1) date of the measurement
 - 2) atmospheric pressure
 - 3) technical details of the equipment used for the measurement
- (iv) ventilation shafts historically utilised by two or more mines must be assigned to just one mine, to avoid double-counting

Part 2

The report set out in Article 25(3) must include the following elements:

- (i) name and address of the operator, owner or licensee, where applicable;
- (ii) site address;
- (iii) methane emissions from all point emission sources outlined in Part 1 including:
 - 1) type of point emission source;
 - 2) technical details of measurement equipment and method employed to estimate methane releases, including sensitivity;
 - 3) proportion of time when measurement equipment was operating;
 - 4) methane concentration registered by the measurement equipment;
 - 5) estimates of methane emissions from the point emission source.

Part 3

The mitigation plan set out in Article 26(1) must include at least the following information:

- (i) list of all point emission sources outlined in Part 1;
- (ii) technical feasibility of mitigation of methane emissions at site level, based on point emission sources;
- (iii) timeline of mitigation of methane emissions from at each site;
- (iv) assessment of the efficiency of projects for collection of abandoned mine methane, where implemented.

The mitigation plan set out in article 26(1) may include the use of mitigation practices to reduce methane emissions, such as the development of geothermal and heat storage projects in flooded mines, hydropower applications in non-flooded mines, capturing methane by degassing, the use of safety-relevant degassing devices, the use of mine gas as an energy resource, or the impoundment of mine water and other possible uses.

Annex VIII

Information to be provided by importers

Pursuant to Article 27(1), 27a(1), (2) and (2a) and 27b(2), importers must provide the following information:

- (i) name and address of exporter and, if different from exporter, name and address of producer;
- (ii) countries and regions corresponding to the Union nomenclature of territorial units for statistics (NUTS) level 1 where the energy was produced and countries and regions corresponding to the Union nomenclature of territorial units for statistics (NUTS) level 1 through which the energy was transported until it was placed on the Union market;
- (iii) as regards crude oil and natural gas, information specifying whether, as applicable, the producer or the exporter is undertaking source and site-level measurement and quantification, whether the data is subject to independent third-party verification, whether its methane emissions are reported on, either independently or as part of commitments to report national GHG inventories in line with United Nations Framework Convention on Climate Change (UNFCCC) requirements, and whether it is in compliance with UNFCCC reporting requirements or with Oil and Gas Methane Partnership 2.0 standards. This information must be accompanied by a copy of the latest report on methane emissions, including, where available, the information referred to in Article 12(6), where provided in such report. The method of quantification (such as UNFCCC tiers or OGMP 2.0 levels) employed in the reporting must be specified for each type of emissions;

- (iv) as regards crude oil and natural gas, whether, as applicable, the producer or the exporter applies regulatory or voluntary measures to control its methane emissions, including measures such as leak detection and repair surveys or measures to control and restrict venting and flaring of methane. This must be accompanied by a description of such measures, including, where available, relevant reports from leak detection and repair surveys and from venting and flaring events with respect to the last available calendar year;
- (v) as regards coal, information specifying whether, as applicable, the producer or the exporter is undertaking source-level methane emissions measurement and quantification, whether it is calculated and quantified in accordance with Annex V, whether the data is subject to independent third party verification, whether its methane emissions are reported on, either independently or as part of commitments to report national GHG inventories in line with United Nations Framework Convention on Climate Change (UNFCCC) requirements, and whether it is in compliance with UNFCCC reporting requirements or in compliance with an international or European standard for monitoring, reporting and verification of methane emissions. This information must be accompanied by a copy of the latest report on methane emissions, including, where available the information referred to in Article 20(6). The method of quantification (such as UNFCCC tiers) employed in the reporting must be specified for each type of emissions;
- (vi) as regards coal, whether the producer or the exporter applies regulatory or voluntary measures to control its methane emissions, including measures to control and restrict venting and flaring of methane; and, where available, the volumes of vented and flared methane calculated in each coal mine at least during the last calendar year and the mitigation plans in force in each coal mine. This information must be accompanied by a description of such measures, including, where available, reports from venting and flaring events with respect to the last available calendar year;

- (vii) name of the entity that performed independent third-party verification of the reports referred to in points (iii) and (v), if any;
- (viii) as applicable pursuant to Article 27a(1) and (2), information showing that the crude oil, natural gas or coal is subject to monitoring, reporting and verification measures at producer level that are equivalent to those set out in this Regulation for contracts concluded or renewed after the entry into force of this Regulation and information on the efforts undertaken to ensure that crude oil, natural gas or coal supplied to the Union under contracts concluded before the entry into force of this Regulation is subject to monitoring, reporting and verification measures at producer level that are equivalent to those set out in this Regulation.
- (ix) whether the model clauses referred to in Article 27a(2a) are used in their supply contracts, specifying which model clauses.
- (x) as applicable pursuant to Article 27b(2), information on the methane intensity associated to the production of crude oil, natural gas and coal placed in the Union market under the relevant supply contracts.
