Gas Networks Ireland

gasnetworks.ie

Biomethane and the EU ETS sector

Updating a GHG Monitoring and Reporting Plan

Contents

Glossary of terms and abbreviations

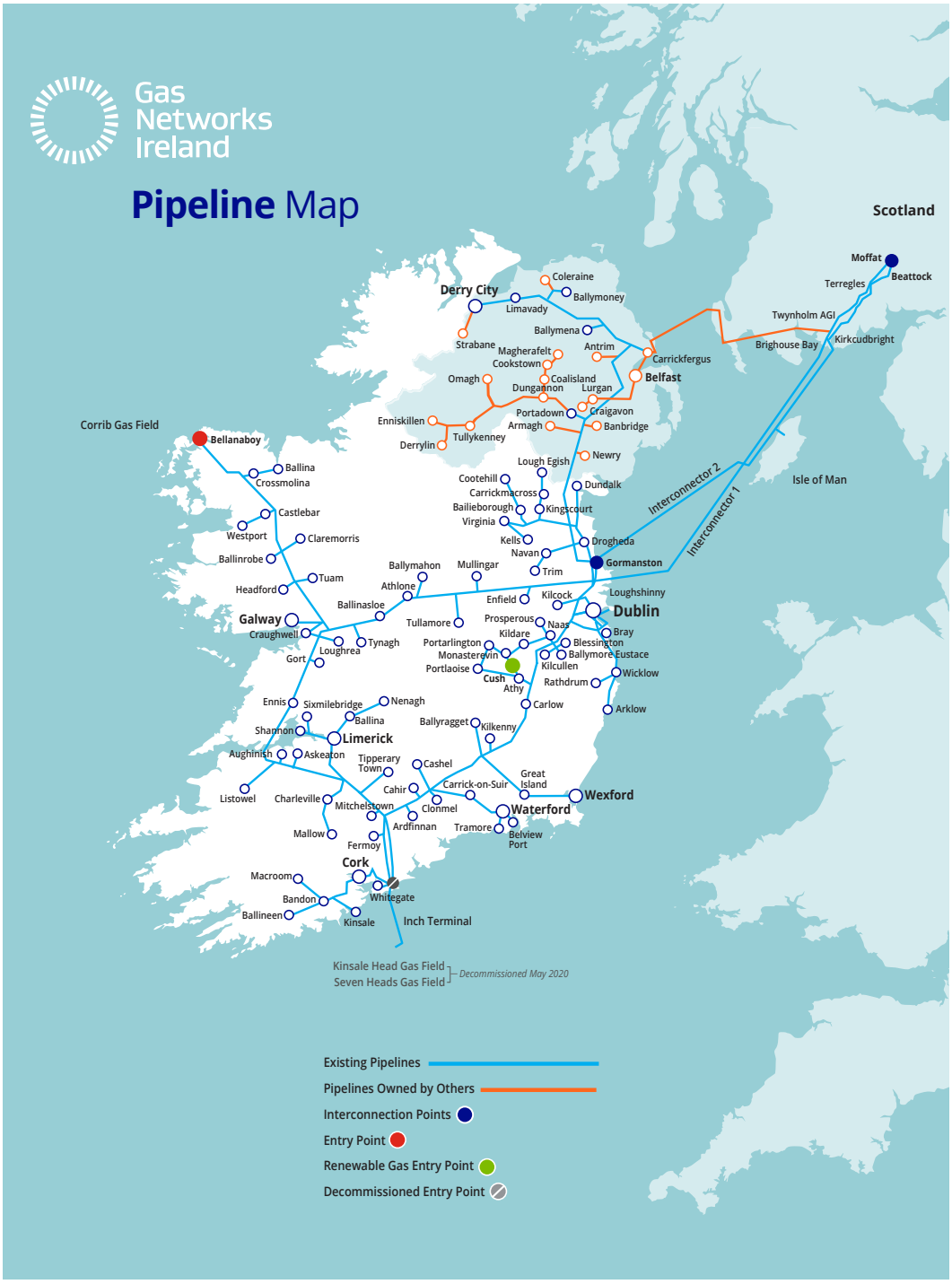
AD	Activity Data
AD Producer	Anaerobic Digestion Producer
AVR	Accreditation and Verification Regulation
BNEF	Biomethane Network Entry Facility
CA	Competent Authority
CEMS	Continuous Emissions Measurement System
CO_2	Carbon Dioxide
CO_2(e)	Carbon Dioxide Equivalent
CHP	Combined Heat and Power
CV	Calorific Value
EF	Emissions Factor
EFpre	Preliminary Emission Factor
EM	Emissions
EPA	Environmental Protection Agency
ETS	Emissions Trading System
EU	European Union
FQ	Fuel Quantity
GHG	Greenhouse Gas
ID	Identification
IPCC	Intergovernmental Panel on Climate Change
KM	Kilometer
MP	Monitoring Plan
MRR	Monitoring and Reporting Regulation
MW	Megawatt
N/A	Not Applicable
NCV	Net Calorific Value
Nm^3	Normal Meters Cubed
OF	Oxidation Factor
PoS	Proof of Sustainability
QA	Quality Assurance
QC	Quality Control
RED	Renewable Energy Directive
SEAI	Sustainable Energy Authority Of Ireland
tCO_2/Nm^3	Tonnes of Carbon Dioxide per Normal meters Cubed
tCO_2/t	Tonnes of Carbon Dioxide per Tonne (of Fuel)
TIC	Thermal Input Capacity
TJ	Terajoule
ZF	Zero Rated Fraction

Foreword

Gas Networks Ireland operates and maintains Ireland's €3bn, 14,758km national gas network, which is considered one of the safest and most modern renewables-ready gas networks in Europe

Over 720,000 Irish homes and businesses trust Ireland's gas network to provide efficient and reliable energy to meet their heating, cooking, manufacturing and transport needs.

The gas network is the cornerstone of Ireland's energy system, securely supplying more than 30% of Ireland's total energy and almost 50% of the country's electricity generation.



Introduction

This document provides guidance on updating a GHG monitoring plan for the inclusion of biomethane as a fuel source on site, to allow for the procurement of biomethane under the EU Emissions Trading System (EU ETS). Amendments are required across the following sections of the plan to ensure full compliance with the Monitoring and Reporting Regulation (MRR). Please refer to Article 38 of the MRR and EU Commission Guidance Document 1 (General Guidance) and Document 3 (Biomass Guidance) for detailed requirements on monitoring and reporting for biomethane.

This guidance document has been reviewed by the EPA's ETS team, and they have noted it is in accordance with current guidance from the EU Commission which may be subject to change in the future. Updated monitoring plans are subject to approval of EPA as Competent Authority for the EU ETS.

Section C, the operator must update the installation description to reference biomethane within the site description, source stream diagram, emission sources, emission points, and as a new source stream.

Section D, must be updated to include the calculation method for biomethane combustion emissions, to facilitate biomethane to be treated as zero-rated where applicable.

Section E, biomethane should be listed as a source stream with details of the measurement instruments, applied tier levels, and demonstration methods used to ensure accuracy and traceability.

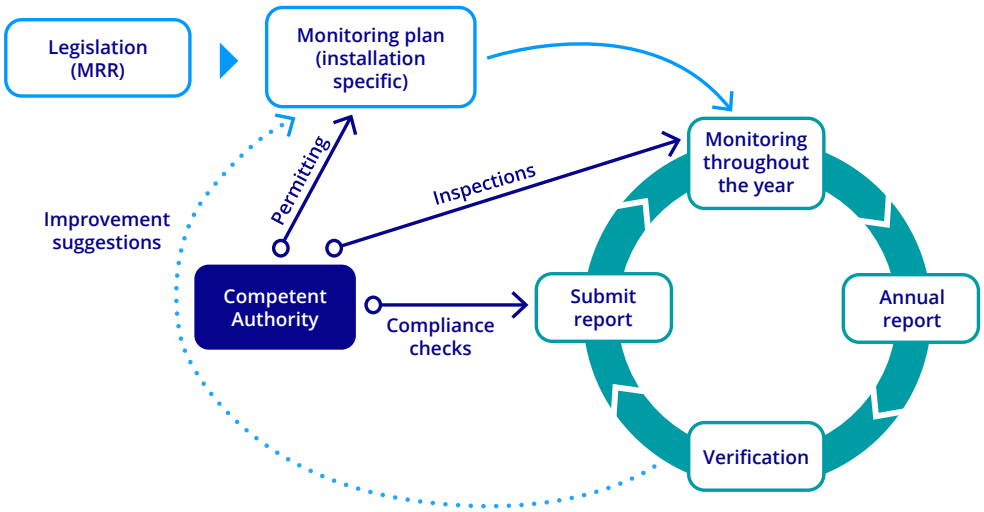


Figure 1: Principle of the EU ETS compliance cycle

The EU ETS compliance cycle includes continuous monitoring, annual emissions reporting, third-party verification, and surrender of allowances equal to verified emissions. This process is based on a documented Monitoring Plan (MP), required for each installation and aligned with the Monitoring and Reporting Regulation (MRR).

The Competent Authority (CA), in this case, the Environmental Protection Agency (EPA), approves monitoring plans, oversees compliance, inspects installations, and reviews verified reports. Operators must also regularly review and improve their monitoring approach in advance of technical changes, in compliance with permit conditions on improvement reports, following improvement suggestions in the Verification Report and following CA inspections where required.

Section C

Installation description

Section C: Installation description

This section provides a general description of the installation and serves as a basis for more detailed inputs in subsequent sections.

Section C5(a): Description of the installation and its activities

This section provides a concise, non-technical description of the site and the installation, including its physical location within the site boundaries. It outlines the main activities carried out at the installation, summarising each process and identifying the technical units involved in these activities.

Update required:

The operator must revise the description of the installation and activities to include the use of biomethane.

Example 1:
Where the current text states. “Kiln 1 is fired with natural gas and supplemented with propane,” it should be updated to read; “Kiln 1 is fired with natural gas and biomethane and supplemented with propane.”

Example 2:
Where the current text states, “Natural gas is combusted in 3 boilers that are used to generate steam. The Thermal Input Capacity (TIC) of these three boilers ranges from 7 MW to 8 MW each. A Combined Heat and Power (CHP) Plant with a TIC of 10 MW also uses Natural Gas to produce electricity.”, it should be updated to read; “Natural gas and biomethane are combusted in 3 boilers that are used to generate steam. The Thermal Input Capacity (TIC) of these three boilers ranges from 7 MW to 8 MW. A Combined Heat and Power (CHP) Plant with a TIC of 10 MW also uses natural gas and biomethane to produce electricity”.

Section C5(b): Source stream diagram document title and reference

To support the description of activities, a simple diagram illustrating emission sources, source streams, sampling points, and metering or measurement equipment may be included.

Update required:

The site diagram must be revised to clearly indicate the entry point of biomethane within the existing natural gas infrastructure. Biomethane should be shown entering the installation at the same point and clearly labelled to reflect its role as a fuel input. This ensures accurate representation of all source streams used on-site.

Section C6(c): Emission points and emitted GHGs

This section requires a list and brief description of all the relevant emission points, including diffuse emission sources.

Example:

The table below lists all the emission points at an installation, which may include directly associated activities/excluded activities.

Emission point reference	Emission point description
A2-1	Kiln 1 stack
A2-2	Kiln 2 stack
A2-3(1)	Natural gas burner dryer stack 1
A2-3(2)	Natural gas burner dryer stack 2

Table 1

Update required:

Emission point reference	Emission point description
A2-1	Kiln 1 stack
A2-2	Kiln 2 stack
A2-3(1)	Natural gas and biomethane burner dryer stack 1
A2-3(2)	Natural gas and biomethane burner dryer stack 2

Table 2

Section C6(e): Relevant source streams

This section lists all source streams (e.g. fuels, materials, products) to be monitored at the installation using calculation-based methods, such as the standard methodology or mass balance.

Source streams should be clearly named (e.g. “natural gas”, “heavy fuel oil”, “cement raw meal”) and classified in accordance with the Monitoring and Reporting Regulation (MRR), as this classification determines applicable requirements such as tier levels.

Selections should align with the activities identified and corresponding emission sources and emission points must be indicated to ensure a clear understanding of the installation’s operation. Where a source stream relates to multiple activities or emission sources, this should be reflected using appropriate notation (e.g. “A1, A2”).

Example:

Source streams (fuels and/or materials)

The table below lists the source streams which are used in activities at the installation.

Source stream references	Source stream type	Name
F1 (Propane)	Combustion: Commercial standard fuels	Propane
F2 (Natural gas)	Combustion: Other gaseous & liquid fuels	Natural gas
F3 (Gas oil)	Combustion: Commercial standard fuels	Gas/diesel

Table 3

Update required:

Source Stream References	Source Stream Type	Name
F1 (Propane)	Combustion: Commercial standard fuels	Propane
F2 (Natural Gas)	Combustion: Other gaseous & liquid fuels	Natural gas
F3 (Gas Oil)	Combustion: Commercial standard fuels	Gas/diesel
F4 (Biomethane)	Combustion: Other gaseous & liquid fuels	Biomethane

Table 4

Note: Biomethane must be added as a new source stream within the monitoring plan. For this new source stream, Table C6(e) should be updated to link biomethane to the appropriate emission sources and emission points, using the correct corresponding references to ensure consistency and traceability.

Section D

Calculation based approaches

Section D: Calculation based approaches

This section provides key information required to support calculation-based monitoring approaches. It serves as a reference for the detailed data provided in the subsequent section “E Source streams”.

Specifically, it includes;

- A list of measuring instruments used to monitor activity data.
- Information sources for default values of calculation factors, in line with Article 31 of the Monitoring and Reporting Regulation (MRR).
- Analytical methods to be applied where analysis is necessary for determining calculation factors.

Section D7(a): Description of the calculation-based approach for monitoring CO_2 emissions at your installation, if applicable

This section outlines the calculation approach used to determine annual CO_2 emissions, including the relevant formulae. Where complex methods are applied, a separate supporting document may be referenced by filename and date.

The summary should clearly demonstrate how data from various sections of the monitoring plan are integrated to calculate emissions. If process emissions are included, it must be specified whether the methodology accounts for inorganic carbon, organic carbon, or both, in line with Section 4 of Annex II of the MRR.

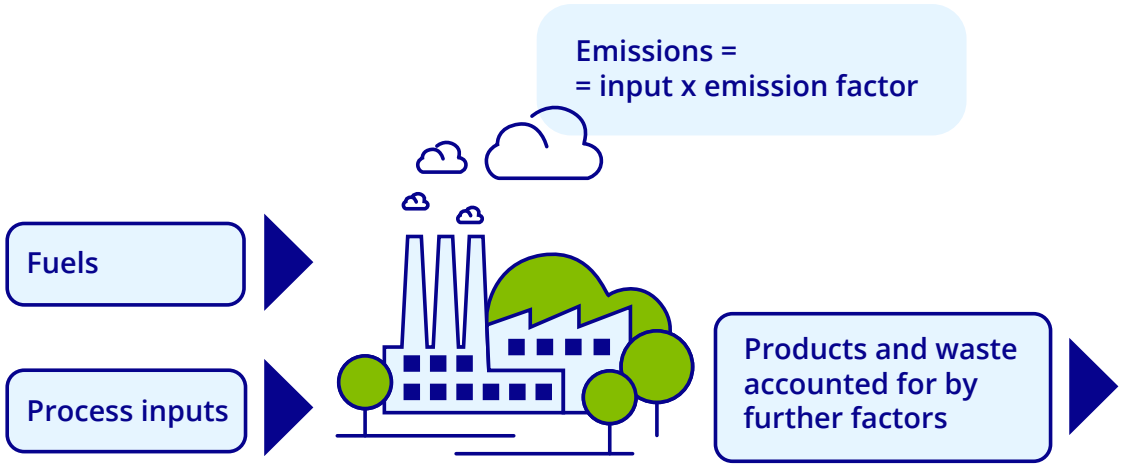


Figure 2: Principle of the standard methodology for calculating emissions

The calculation of annual CO_2 emissions at the installation follows a structured approach.

a) For source streams using default values (e.g. natural gas, heavy fuel oil, and all minor streams), activity data is aggregated before applying the calculation formula in accordance with Article 24(1) of the MRR.

b) For source streams where calculation factors are based on analytical results (e.g. coal, raw meal), emissions are calculated per batch using corresponding activity data and analysis results. These are then summed to determine the annual emissions for each source stream.

c) In cases where batch-based analysis is used, weighted average calculation factors are derived for reporting purposes.

d) Total annual emissions are obtained by summing from all source streams.

Pursuant to Article 24(1) of the MRR, the following equation is applied to calculate combustion emissions;

$$Em = AD * EF * OF$$

Where:

Em – Emissions [t CO_2]

AD – Activity data [TJ, t or Nm^3]

EF – Emissions factor [t CO_2/TJ, t CO_2/t or t CO_2/Nm^3]

OF – Oxidation factor [dimensionless]

Factors with units in Nm^3 are usually used for gaseous fuels. To achieve numbers of similar magnitude, values are usually given in [1000 Nm^3] in practice.

See the following regarding AD, EF and OF.

Activity data of fuels (including fuels used as process input) must be expressed as net calorific value:

$$AD = FQ * NCV$$

Where:

FQ – Fuel quantity [t or Nm^3]

NCV – Net calorific value [TJ/t or TJ/Nm^3]

(found from gas supplier documentation)

The Competent Authority may allow the operator to use an emission factor expressed as tCO_2/t fuel or tCO_2/Nm^3 (Article 36(2)).

$$EF = EFpre * (1 - ZF)$$

Where:

EF – Emissions factor

EFpre – Preliminary emission factor (i.e. according to Article 3(36), "assumed total emission factor of a fuel or material based on the carbon content of its biomass fraction and its fossil fraction before multiplying it by the fossil fraction to produce the emission factor")

ZF – Zero-rated fraction [dimensionless]

Under the EU ETS Directive, certain fuels such as biomass, biofuels and synthetic low carbon fuels may be assigned a zero-emission factor ("zero-rated") for reporting purposes, provided they meet specific sustainability and GHG savings criteria outlined in RED II and the MRR. In such cases, the emission factor must be calculated using the preliminary emission factor and the proportion of the fuel that qualifies for zero rating.

In the case of biomethane injected into the gas grid, where the biomethane meets the sustainability and GHG savings criteria set out in RED II and is not double counted, the zero-rated fraction can be determined using purchase records of the equivalent energy content.

The energy content of the sustainable biomethane based on purchase records is subtracted from total TJ of natural gas delivered to the site.

Natural gas and biomethane are reported as two separate source streams in the annual emissions report.

The EFpre for biomethane is the annual natural gas emission factor for the site, which is either the country specific factor or the site-specific factor based on continuous chromatography.

The NCV for biomethane is obtained from the biomethane fuel invoices.

Therefore, biomethane emissions are calculated as follows:

$$Em = FQ * NCV * EFpre * (1-ZF) * OF$$

Note

The calculation approach, including formulae used to determine annual CO_2 emissions, will be calculated in accordance with the requirements of the Monitoring and Reporting Regulation (MRR) (Commission Implementing Regulation (EU) 2018/2066). The emissions will be calculated considering the EPA and EU guidance with respect to values for the emission factors, net calorific values & oxidation factors.

Combustion emissions will be calculated and reported in accordance with the MRR.

Update required:

The description of the calculation-based approach section must be updated to reflect the inclusion of biomethane. Although combustion emissions are calculated using the standard methodology, proof of sustainability certificates including GHG savings calculations confirming the GHG savings are above the appropriate threshold for use of the fuel for heating or electricity generation (issued by an economic operator certified under a Commission approved voluntary scheme for RED II for biomethane) are required to confirm full compliance with applicable criteria. As a result, the sustainable biomass is 100% and the associated emissions are reported as zero under the EU ETS.

Section D7(b): Specification and location of measurement systems for determining the activity data for source streams

For each source stream where emissions are determined by calculation, the specification and location of all relevant measurement systems must be clearly described.

This includes identifying where each meter is installed within the installation and how it is referenced in the process flow chart.

For each measuring instrument, the manufacturer's specified uncertainty, and its associated range(s) must be provided, along with the typical operating range used on-site. **This should also include the measurement instruments at the Biomethane Network Entry Facility (BNEF) for indigenous biomethane and/or Gas Networks Ireland's interconnectors for imported biomethane.** All instruments relevant to emissions monitoring – such as primary meters, sub-meters, and deduction meters – must be included, with continuous emissions measurement systems (CEMS) reported separately under the appropriate section. Each instrument should have a unique ID for traceability, and while instrument replacement does not constitute a significant change to the monitoring plan, a written procedure for managing such updates must be in place. For gas flow meters, units should reflect whether pressure/temperature compensation is internal or performed by a separate device, in which case both instruments must be listed.

Source stream references	Measurement device reference	Determination method	Instrument under control of	Conditions of article 29(1) satisfied	Invoices used to determine amount of fuel or material	Trade partner and operator independent
M1 (Keuper Marl Clay)	MD5	Batch	Operator	N/A	N/A	N/A
F1 (Propane)	MD1	Batch	Trade partner	Yes	Yes	Yes
F2 (Natural gas)	MD2 (Serial number)	Continual	Trade partner	Yes	Yes	Yes

Table 5

Update required:

The technical specification and latest calibration documentation must be included as part of the updated GHG monitoring plan and consider renaming natural gas meters as natural gas and biomethane meters.

This includes attaching the technical specification and latest calibration records for the natural gas meter(s).

As per the above, **the technical specifications for the metering system at the BNEF and interconnectors must also be included.**

This will be obtained from your Gas Supplier, Energy Trader, Anaerobic Digestion (AD) Producer or Gas Networks Ireland (for BNEF's owned and operated by Gas Networks Ireland) regarding indigenous biomethane injected into the national gas network in Ireland. Likewise, for imported biomethane, these details will be acquired from Gas Networks Ireland regarding the Moffat and Beattock interconnectors with Scotland.

Section D7(j): Description of the procedure used to keep track of instruments installed in the installation used for determining activity data

Section D7(k): Description of the procedure used to assess if biomass or any other zero-rated source streams comply with Article 38 (5), 39a (3) or 39a (4)

Sections D7(j) and (k) of the Monitoring Plan address critical procedures related to data accuracy and regulatory compliance within the installation. Section D7(j) outlines the method used to track all instruments installed for determining activity data, ensuring that all relevant equipment is properly identified, maintained, and documented to support accurate emissions reporting.

Section D7(k) describes the procedure for verifying whether biomass or other zero-rated source streams meet the requirements set out in Articles 38(5), 39a (3), or 39a (4) of the MRR. This includes assessing sustainability criteria and GHG savings in line with the applicable regulatory framework. Together, these sections ensure the integrity and transparency of emissions data and the appropriate application of zero-rated provisions.

Update required:

Biomethane must be incorporated into the emissions calculation process, with proof of sustainability certificates required for verification. These certificates, obtained from the Gas Supplier/Energy Trader/Anaerobic Digestion (AD) Producer, must be issued under a voluntary scheme recognised by the EU Commission for RED II for biomethane and cover sustainability and GHG savings criteria for the whole biomethane chain of custody. They must demonstrate compliance with both sustainability requirements and the GHG savings criteria necessary for reporting under the MRR. Evidence of current certification to the voluntary scheme for the economic operator who issues the proofs of sustainability must be maintained on-site.

This information should all be contained within the Proof of Sustainability certificate. GHG savings calculation for the fuel in use, taking into account emissions from the fuel in use and efficiency of generation of heat or electricity as relevant, may be determined by the operator where this information is not included on the proof of sustainability. See Annex V and VI of RED II and EU Commission Guidance Document 3 on biomass for further guidance.

Note: Sections D7(j) and (k) also serve as a summary of the full procedures document, which must be submitted as an attachment, as this is where the operator includes detailed information regarding GHG saving calculations, amongst other important procedures (see Appendix I).

Section E

Source streams

Section E: Source streams

This section is where the source stream name, type, and category are displayed automatically, based on the data entered in Section C6(e).

To ensure accurate tier assignment, it is important that each source stream is correctly categorised as major, minor, or de-minimis in that section. If no category is assigned, the system will default to a displayed category, which may result in incorrect tier application. Source stream types are also automatically linked to the appropriate monitoring methods and relevant activity data parameters, in line with the requirements of the MRR (Articles 24,25 and Annex II).

Example from Monitoring Plan template:

Example source stream	Heavy fuel oil	Major

Source stream type	Combustion: Other gaseous & liquid fuels
Method applicable according to MRR	Standard method: Fuel, article 24(1)
Parameter to which uncertainty applies	Amount of fuel (t) or (Nm^3)

Table 6

Update required:

The biomethane source stream added in Section C6(e) is automatically reflected in Section E of the monitoring plan. The operator must select this source stream and complete the associated data fields specific to this new entry.

Section E8(a): Activity data determination method

This section outlines the method used to determine activity data, in line with Article 27(1) of the MRR. Data can be determined either through continuous metering at the emission source or via batch metering (see “update required” below for guidance regarding biomethane), which includes aggregation of deliveries and stock changes.

Update required:

The operator must update the biomethane source stream by selecting continuous metering as the determination method.

Section E8(b): Measurement instruments used

This section is used to identify the measurement instruments associated with the source stream, selected from those listed in Section D7(b).

Update required:

This section should be linked to Section D7(b), where the biomethane measurement instrument is entered, ensuring consistency and traceability across the monitoring plan.

Section E8(c-e): Activity data tier and uncertainty levels

This section requires reporting the uncertainty achieved in service over the full reporting period, based on the tier level used. Typically, this is determined through an uncertainty assessment (Section D7(c)), but simplifications are allowed under Articles 28(2), 28(3), and 29(2). The operator may use the maximum permissible error or calibrated uncertainty with an adjustment factor, provided the instrument is properly installed. If the instrument is under national legal metrological control, the maximum permissible error can be used. Details on how uncertainty is determined should be provided. Guidance can be found in Articles 28 and 29 of the MRR.

See Annex II, page 47 of the following link, for a full list of Tiers for Activity Data: COMMISSION IMPLEMENTING REGULATION (EU) 2018/ 2066 - of 19 December 2018 - on the monitoring and reporting of greenhouse gas emissions pursuant to Directive 2003/ 87/ EC of the European Parliament and of the Council and amending Commission Regulation (EU) No 601 / 2012.

Implementing regulation - 2018/2066 - EN - EUR-Lex

Activity data (fuel quantity) tier system;

The required tier level depends on the installation size; the operator must classify the installation according to the average annual emissions (Article 19(2)):

- Category A: Annual average emissions are equal to or less than 50,000 tonnes of CO_2(e).
- Category B: Annual average emissions are more than 50,000 tonnes of CO_2(e) and equal to or less than 500,000 tonnes of CO_2(e).
- Category C: Annual average emissions are more than 500,000 tonnes of CO_2(e).

The 'annual average emissions' means the average verified emissions of the previous trading period and for annual reporting, emissions from zero-rated carbon are excluded. CO_2 transferred out of the installation, if any, is counted as emitted to better indicate the size of the GHG amounts occurring at the installation.

Section E8(f): Applied tiers for calculation factors

	Calculation factor	Required tier	Applied tier	Full text applied tier
i.	Net calorific value (NCV)	2a/2b	3	Laboratory analyses
ii.	Emission factor (preliminary)	2a/2b	3	Laboratory analyses
iii.	Oxidation factor	1	1	Default value OF=1
iv.	Conversion factor	N/A		
v.	Carbon content	N/A		
vi.	Biomass fraction (if applicable)		N/A	

Table 7: Example data

Calculation factors and tier levels:

Calculation factors – such as emission factors, net calorific values, oxidation factors, and biomass fractions – are determined in accordance with Article 30(1) of the MRR, based on the applicable tier level. These factors can be established using either default values or laboratory analyses, with the tier level determining the required method.

Default Values:

- Tier 1: Standard IPCC values (Annex VI) or validated historical data.
- Tier 2: Country-specific values (e.g. national inventory data), Competent Authority-approved literature values, or supplier-guaranteed values within 1% accuracy.
- Tier 2b (Established proxies): Empirical correlations (e.g. density or calorific value) based on annual analysis.

- Tier 2b (Purchasing records): Supplier-provided data, accepted if based on recognised standards and for commercial fuels.
- Tier 3 (Highest tier; laboratory analyses): Required for the most accurate data, fully compliant with Article 32-35. In some cases, stoichiometric values may be used for pure substances if justified.

Biomass fraction determination:

- Tier 1: Competent Authority application of Article 39(3), 39(4) in case of natural gas grids into which biogas is injected, the CA allows the zero-rated fraction to be determined using purchase records of equivalent energy content or EU-published values, or assuming 100% fossil fraction (no tier).
- Tier 2: Estimation method submitted for approval under Article 39(2).
- Tier 3a: Laboratory analyses in line with Articles 32-35.
- Tier 3b: Mass balance approach, applicable to traceable production processes.

Finally, tier requirements apply primarily to major and minor source streams. As per Article 26(4), oxidation and conversion factors must meet at least the minimum tiers listed in Annex II.

Tier level	Description
Tier 1	The operator shall apply one of the following: (a) the standard factors listed in section 1 of Annex VI. (b) other constant values in accordance with point (e) of Article 31(1), where no applicable value is contained in section 1 of Annex VI.
Tier 2a	The operator shall apply country specific emission factors for the respective fuel or material in accordance with points (b) and (c) of Article 31(1) or values in accordance with point (d) of Article 31(1).
Tier 2b	The operator shall derive emission factors for the fuel based on one of the following established proxies, in combination with an empirical correlation as determined at least once per year in accordance with Articles 32 to 35 and 39: (a) density measurement of specific oils or gases, including those common to the refinery or steel industry. (b) net calorific value for specific coal types.
Tier 3	The operator shall apply one of the following: (a) determination of the emission factor in accordance with the relevant provisions of Articles 32 to 35. (b) the empirical correlation as specified for Tier 2b, where the operator demonstrates to the satisfaction of the Competent Authority that the uncertainty of the empirical correlation does not exceed 1/3 of the uncertainty value to which the operator has to adhere regarding the activity data determination of the relevant fuel or material.

Table 8: Emission factor tiers;

Update required:

The operator must ensure that appropriate tier levels and uncertainty thresholds (where relevant) are correctly applied to the biomethane source stream for activity data and calculation factors.

Conclusion and appendices

Conclusion

In conclusion, the inclusion of biomethane in the monitoring plan is essential for its recognition as a compliant fuel under the EU ETS.

By updating Sections C, D, and E, the operator ensures accurate representation of biomethane within the installation, transparent emission calculations aligned with sustainability and GHG savings criteria, and clear documentation of the associated measurement and monitoring methods. These updates not only support regulatory compliance but also demonstrate the operator's commitment to sustainable fuel use and emissions reduction.

A checklist has been provided (see Appendix II) to review the steps taken and ensure full compliance.

References

1. ETS Monitoring, reporting and verification
   - ETS Monitoring, reporting and verification | Environmental Protection Agency
2. Monitoring Plan Template and guidance documentation
   - Monitoring, reporting and verification - European Commission
3. SEAI conversion factors - Conversion Factors | SEAI Statistics | SEAI
4. RED II biomass requirements for EU ETS participants February 2025 - Slide 1
5. Regulation; commission implementing regulation (EU) 2018/2066
   - Implementing regulation - 2018/2066 - EN - EUR-Lex
6. Guidance to interpretation of Annex I of the EU ETS directive (excl. aviation and maritime activities) - Guidance note on interpretation of the Scope of the EU ETS

Appendix I: Procedures Document overview

Procedures Document overview

The Procedures Document is a company-level compliance framework for the EU ETS, grounded in the MRR and Accreditation and Verification Regulation (AVR) regulations. It complements the site-specific GHG Monitoring Plan and must be updated whenever key sections of the plan—such as source streams, monitoring methods, or data management—are revised.

Sections D7(j) and D7(k) of the Monitoring Plan require summaries of procedures for calculating emissions and activity data (D7(j)), as well as for data flow, quality assurance/quality control (QA/QC), and control systems (D7(k)). The full Procedures Document must be attached to the Monitoring Plan and kept up to date to ensure consistency with the plan.

When updating the Procedures Document to include biomethane;

The Procedures Document must detail how sustainability is verified, how GHG savings are calculated, and how Proof of Sustainability (PoS) certificates are managed. These procedures support compliance with RED II, are summarised in Sections D7(j) and D7(k) of the Monitoring Plan, and must be included in the full document attached to the plan.

Required updates to the procedures document

Reference guide for updating procedures in line with the GHG Monitoring Plan

- ☐ Update the list of source streams to include biomethane.
- ☐ Specify the source of emission factor and calorific value for biomethane.
- ☐ Reference the sustainability status and whether it qualifies for zero-rating.
- ☐ Document how the emission factor for biomethane is determined (e.g. default vs analysis).
- ☐ Explain how the biomass fraction is verified (100% for biomethane if certified).
- ☐ Include procedures for handling non-sustainable biomethane (treated as fossil).
- ☐ Describe the monitoring approach for biomethane (e.g., continuous measurement or calculation).
- ☐ Include tier level applied and justification.
- ☐ Detail any specific instruments or systems used.
- ☐ Summarise procedures for determining activity data and emission factors for biomethane.
- ☐ Summarise procedures for data flow, QA/QC, and control systems related to biomethane.
- ☐ Ensure these summaries match the full procedures attached.
- ☐ Update data collection and validation procedures to include biomethane.
- ☐ Describe how PoS certificates are collected, verified, and stored.
- ☐ Describe in detail the GHG savings calculation.
- ☐ Include roles and responsibilities for managing biomethane data.
- ☐ Add any new software or systems used for tracking biomethane.

Biomass source stream

The Anaerobic Digestion (AD) plant, Gas Supplier or Energy Trader shall provide Proof of Sustainability (PoS) certificates to verify the energy content of the biomethane procured.

Compliance with the Monitoring and Reporting Regulation (MRR) must be ensured by confirming the following:

- The AD plant and the receiving site are connected to the same gas network.
- The biomethane supplied is compliant with the Renewable Energy Directive (RED) II.
- There is no double counting of the same biomethane quantity.

Determination of biomethane quantities

The zero-rated fraction of biomethane shall be determined through:

- Review and analysis of purchase documentation.
- Compilation of supporting evidence sufficient to meet the requirements of the Competent Authority (CA).

Data flow activities

Biomethane quantities shall be established based on the PoS certificates provided.

Relevant data shall be systematically entered into the emissions calculation framework.

Emissions shall be calculated using the following formula:

$$\text{Emissions} = AD \times EFpre \times (1 - ZF) \times OF$$

- AD (Activity Data): Derived from purchase records or PoS certificates.
- EFpre (Preliminary Emission Factor): Annual emission factor for natural gas.
- OF (Oxidation Factor): As applicable.

The annual biomethane usage shall be calculated using the zero-rated fraction and the prescribed equation.

Document	Purpose	Includes PoS?	Submission
Monitoring Plan (D7)	Describes procedures	✘ No	Via EU ETS Reporting Tool
Procedures Document	Explains how PoS is managed	✔ Yes (procedures only)	Attached to Monitoring Plan
PoS Certificates	Prove sustainability of biomass	✔ Yes (actual certificates)	Uploaded separately via EU ETS Reporting Tool as part of the annual emissions report submission

Appendix II: Checklist

Checklist

Section C: Installation description

Have you:	Check
Added biomethane to installation/activity description in section C5(a)	☐
Updated site diagram to show biomethane entering with natural gas, labeled as fuel input C5(b)	☐
Identified any new emission sources from biomethane in C6(b)	☐
Added biomethane to emission point descriptions in C6(c)	☐
Listed biomethane as a new source stream in C6(e)	☐

Section D: Calculation-based approaches

Have you:	Check
Included biomethane in CO_2 calculations; apply zero emissions if certified (EU voluntary scheme RED II compliant) in D7(a)	☐
Added specification/calibration for biomethane meters; incl. BNEF's owned by 3rd parties or GNI, incl. interconnectors -and- data sources in section D7(b)	☐
Tracked biomethane with sustainability proof; ensure RED II compliance in D7(j&k)	☐
Attached updated procedures document, including biomethane sustainability proof to D7(j&k)	☐

Section E: Source streams

Have you:	Check
Selected biomethane stream and completed data fields in section E	☐
Used continuous metering; confirm sustainability and invoice use in section E8(a)	☐
Linked to D7(b) instruments in section E8(b)	☐
Applied correct tiers and uncertainty levels in E8(c&f)	☐

Gas Networks Ireland

The main contact details for
Gas Networks Ireland are:

General Enquiries
1800 464 464

Lines open Monday to Friday 8am – 8pm
and Saturday 9am – 5.30pm

24 Hour Emergency Service
1800 20 50 50

networksinfo@gasnetworks.ie

@GasNetIRL
gasnetworks.ie

GNI_GHGMP_10/25