

Commission Regulation (EU) No 601/2012 of 21 June 2012 on the monitoring and reporting of greenhouse gas emissions pursuant to Directive 2003/87/EC of the European Parliament and of the Council (Text with EEA relevance) (repealed)

CHAPTER III

MONITORING OF EMISSIONS OF STATIONARY INSTALLATIONS

SECTION 3

Measurement-based methodology

Article 40

Use of the measurement-based monitoring methodology

The operator shall use measurement-based methodologies for all emissions of nitrous oxide (N₂O) as laid down in Annex IV, and for quantifying CO₂ transferred pursuant to Article 49.

In addition, the operator may use measurement-based methodologies for CO₂ emission sources where it can provide evidence that for each emission source the tiers required in accordance with Article 41 are complied with.

Article 41

Tier requirements

1 For each emission source which emits more than 5 000 tonnes of CO_{2(e)} per year, or which contributes more than 10 % of the total annual emissions of the installation, whichever is higher in terms of absolute emissions, the operator shall apply the highest tier listed in section 1 of Annex VIII. For all other emission sources, the operator shall apply at least one tier lower than the highest tier.

2 Only where the operator can demonstrate to the satisfaction of the competent authority that application of the tier required under paragraph 1 is technically not feasible or incurs unreasonable costs and application of a calculation methodology using the tier levels required by Article 26 is technically not feasible or incurs unreasonable costs, may a next lower tier be used for the relevant emission source, with a minimum of tier 1.

Article 42

Measurement standards and laboratories

1 All measurements shall be carried out applying methods based on EN 14181 Stationary source emissions — Quality assurance of automated measuring systems, EN 15259 Air quality — Measurement of stationary source emissions — Requirements for measurement

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sections and sites and for the measurement objective, plan and report, and other corresponding EN standards.

Where such standards are not available, the methods shall be based on suitable ISO standards, standards published by the Commission or national standards. Where no applicable published standards exist, suitable draft standards, industry best practice guidelines or other scientifically proven methodologies shall be used, limiting sampling and measurement bias.

The operator shall consider all relevant aspects of the continuous measurement system, including the location of the equipment, calibration, measurement, quality assurance and quality control.

2 The operator shall ensure that laboratories carrying out measurements, calibrations and relevant equipment assessments for continuous emission measurement systems (CEMS) shall be accredited in accordance with EN ISO/IEC 17025 for the relevant analytical methods or calibration activities.

Where the laboratory does not have such accreditation, the operator shall ensure that equivalent requirements of Article 34(2) and (3) are met.

Article 43

Determination of emissions

1 The operator shall determine the annual emissions from an emission source over the reporting period by summing up over the reporting period all hourly values of the measured greenhouse gas concentration multiplied by the hourly values of the flue gas flow, where the hourly values shall be averages over all individual measurement results of the respective operating hour.

In the case of CO₂ emissions, the operator shall determine annual emission on the basis of equation 1 in Annex VIII. CO emitted to the atmosphere shall be treated as the molar equivalent amount of CO₂.

In the case of nitrous oxide (N₂O), the operator shall determine annual emissions on the basis of the equation in subsection B.1 of section 16 of Annex IV.

2 Where several emission sources exist in one installation and cannot be measured as one emission source, the operator shall measure emissions from those sources separately and add the results to obtain the total emissions of the specific gas over the reporting period.

3 The operator shall determine the greenhouse gas concentration in the flue gas by continuous measurement at a representative point through one of the following:

- a direct measurement;
- b in the case of a high concentration in the flue gas, calculation of the concentration using an indirect concentration measurement applying Equation 3 of Annex VIII and taking into account the measured concentration values of all other components of the gas stream as laid down in the operator's monitoring plan.

4 Where relevant, the operator shall determine separately any CO₂ amount stemming from biomass using calculation-based monitoring methodologies and subtract it from the total measured CO₂ emissions.

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5 The operator shall determine the flue gas flow for the calculation in accordance with paragraph 1 by one of the following methods:

- a calculation by means of a suitable mass balance, taking into account all significant parameters on the input side, including for CO₂ emissions at least input material loads, input airflow and process efficiency, as well as on the output side including at least the product output, the O₂, SO₂ and NO_x concentration;
- b determination by continuous flow measurement at a representative point.

Article 44

Data aggregation

1 The operator shall calculate hourly averages for each parameter, including concentrations and flue gas flow, relevant for determining emissions using a measurement-based methodology by using all data points available for that specific hour.

Where an operator can generate data for shorter reference periods without additional cost, he shall use those periods for the determination of the annual emissions in accordance with Article 43(1).

2 Where the continuous measurement equipment for a parameter is out of control, out of range or out of operation for part of the hour or reference period referred to in paragraph 1, the operator shall calculate the related hourly average pro rata to the remaining data points for that specific hour or shorter reference period provided that at least 80 % of the maximum number of data points for a parameter are available. Article 45(2) to (4) shall apply where less than 80 % of the maximum number of data points for a parameter are available.

Article 45

Missing data

1 Where a piece of measurement equipment within the continuous emissions monitoring system is out of operation for more than five consecutive days in any calendar year, the operator shall inform the competent authority without undue delay and propose adequate measures to improve the quality of the continuous emissions monitoring system affected.

2 Where a valid hour or shorter reference period in accordance with Article 44(1) of data cannot be provided for one or more parameters of the measurement-based methodology due to the equipment being out of control, out of range or out of operation, the operator shall determine values for substitution of each missing hour of data.

3 Where a valid hour or shorter reference period of data cannot be provided for a parameter directly measured as concentration, the operator shall calculate a substitution value as the sum of an average concentration and twice the standard deviation associated with that average, using Equation 4 in Annex VIII.

Where the reporting period is not applicable for determining such substitution values due to significant technical changes at the installation, the operator shall agree with the competent authority a representative timeframe for determining the average and standard deviation, where possible with the duration of one year.

4 Where a valid hour of data cannot be provided for a parameter other than concentration, the operator shall obtain substitute values of that parameter through a suitable

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mass balance model or an energy balance of the process. The operator shall validate the results by using the remaining measured parameters of the measurement-based methodology and data at regular working conditions considering a time period of the same duration as the data gap.

Article 46

Corroborating with calculation of emissions

The operator shall corroborate emissions determined by a measurement-based methodology, with the exception of nitrous oxide (N₂O) emissions from nitric acid production and greenhouse gases transferred to a transport network or a storage site, by calculating the annual emissions of each considered greenhouse gas for the same emission sources and source streams.

The use of tier methodologies shall not be required.

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