

EU ETS Uncertainty Requirements MRG 2



October 11 2007

Ms. Annette Prendergast

EPA Emissions Trading

a.prendergast@epa.ie

Introduction

- Purpose of this presentation is to highlight uncertainty requirements in MRG 2.
- Present a practical (starting point) approach to assessment of uncertainty:
 - Of measurement instruments and measurement systems (section 7.1)
 - Of activity specific factors (section 13.6)
- Draft Guidance developed by Dutch Emission Authority in close liaison with Emissions Trading Technical Support Group of the IMPEL EU ETS project.
- Operators not obliged to follow this Guidance but will need to carry out an alternative or supplementary assessment where relevant to satisfaction of EPA.

Uncertainty Requirements MRG 2

- Section 2(3)(b) “*Uncertainty means a parameter, associated with the result of the determination of a quantity, that characterises the dispersion of the values that could reasonably be attributed to the particular quantity, including the effects of systematic as well as of random factors and expressed in percent and describes a confidence interval around the mean value comprising 95% of inferred values taking into account any asymmetry of the distribution of values.*”
- Trueness definition (Section 3) includes the statement “*Sources of uncertainties shall be identified and reduced as far as practicable*”
- The monitoring plan (Section 4.3) shall contain evidence demonstrating compliance with uncertainty thresholds for activity data and sampling frequency and fall back approach where applicable.

Uncertainty Requirements MRG 2

■ Fall-Back Approaches

- Uncertainty analysis shall quantify uncertainties of all variables and parameters for calculating emissions taking into account ISO-Guide to the Expression of Uncertainty in Measurement (1995) and ISO 5168:2005
- This detailed uncertainty assessment must be in accordance with the above ISO guidelines. The practical approach presented in this presentation not suitable for Fall-Back.
- Analysis carried out before monitoring plan approved and updated annually
- Uncertainty threshold to be met for total annual emissions value
+/- 7.5% Cat. A: +/- 5% Cat. B: +/- 2.5% Cat. C

Uncertainty Requirements MRG 2

- Section 7.1 *“The operator, via the quality assurance and control process, shall manage and reduce the remaining uncertainties of the emissions data in his emissions report”*
- Section 13.6 *“The sampling procedure and frequency of analysis shall be designed to ensure that the annual average of the relevant parameter is determined with a maximum uncertainty of less than 1/3 of the maximum uncertainty which is required by the approved tier level for the activity data for the same source stream”.*

MRG 2 Section 7.1

- Written proof is required, of uncertainty level of activity data for each source stream in order to demonstrate compliance with the uncertainty thresholds defined in Annexes II-XI.
- Uncertainty of the measurement system comprises:
 - Specified uncertainty of the measurement instruments
 - Uncertainty associated with calibration
 - Additional uncertainty associated with the use of the measurement instruments
 - Stated uncertainty values are assessed over a year
- Error propagation equations indicated

MRG 2 Section 7.1

- The operator shall base calculation on the specifications as provided by supplier of the measurement instruments. If specifications unavailable, operator shall provide for an uncertainty assessment. In both cases take into account corrections of specifications from actual use, such as ageing, conditions of physical environment, calibration and maintenance. Corrections may involve conservative expert judgement.

Section 7.1 Exemptions

- Installations with low emissions ($< 25,000$ t CO₂/annum) according to section 16 of MRG.
- Commercially traded fuels or materials
- *De-minimis* source streams (involving no-tier measurement methodology without uncertainty threshold)

Installations with low emissions (Section 16)

- *“Where necessary, the operator may use information as specified by the supplier of the relevant measurement instruments irrespective of specific use conditions to estimate the uncertainty of activity data.” (In- house meters)*
- *“The use of fuels or materials can be determined based on purchasing records and estimated stock changes without further consideration of uncertainties” (Fiscal meters)*

Commercially traded fuels/Materials (7.1)

- *“As regards commercially traded fuels or materials, competent authorities may permit the determination of the annual fuel/material flow by the operator based solely on the invoiced amount of fuel or material without further individual proof of associated uncertainties, provided that national legislation or the demonstrated application of relevant national or international standards ensures that respective uncertainty requirements for activity data are met for commercial transactions”*
- See definitions 2(2)(f) & (g). e.g NG, fuel oils, coal
- Operators should check with EPA prior to submitting MP.

Guidance Note 1 (Draft)

- Annex I contains some standard measurement uncertainties
- Some Operators may need to go no further than Step 1 and Annex 1.
- Irrespective of Annex 1 values operators should submit their own values where they have better data.
- If annex I conditions are not met Operator can still use uncertainty value but needs to consider additional uncertainties.

Guidance Note 1

- Steps 4 and 5 of the guidance assume components are uncorrelated/independent: need to apply alternative section 7.1 summation for interdependent uncertainties.
- Operators will sometimes need to identify a standard uncertainty value for the measurement system
- This should be done in consultation with manufacturer/supplier or another meter expert.
- In-house experts are allowed

Guidance Note 2

- Guidance Note 2 is self explanatory and available for uncertainty assessment of activity specific factors for sample frequency determination. Only required in specific cases see section 13.6 of MRG 2.

Conclusion

- Operators not obliged to follow this Guidance but will need to carry out an alternative or supplementary assessment where relevant to satisfaction of EPA.
- Operators can go further than the guidance note and should where superior information is available.
- Guidance Notes 1 and 2 are currently in draft format and will be available to download from our website: www.epa.ie
- Guidance notes 1 and 2 are not a legal interpretation of the requirements of Section 7.1 and 13.6 of MRG 2 on uncertainty. If in doubt refer to the guidelines.
- Guidance Notes 1 and 2 are not suitable for Fall-back approach uncertainty.



Thank-You