

German National Working Group on technical questions of the Monitoring and Reporting Guidelines

Position paper

on the

Commission Decision 2004/156/EC of 29 January 2004 establishing guidelines for the monitoring and reporting of greenhouse gas emissions pursuant to Directive 2003/87/EC of the European Parliament and of the Council

(Monitoring Guidelines)

The European Commission has initiated the review process set out in the Monitoring Guidelines and due for completion by 31 December 2006 by issuing a wide-ranging questionnaire. The review is intended to take into account experiences made in applying the Monitoring Guidelines in the member states, with a view to any changes that might be made taking effect from 1 January 2008.

We welcome the initiative of the European Commission to undertake a review of the Monitoring Guidelines, and in particular the plan to integrate all stakeholders into this process on a broad basis. In view of the allocation of responsibilities among operators, verifiers and competent authorities as set out in the Monitoring Guidelines, and of the competences of the Länder Immission Control Authorities and the German Emissions Trading Authority (Deutsche Emissionshandelsstelle – DEHSt) in the Federal Environmental Agency (Umweltbundesamt – UBA) which is laid down in the German legislation implementing emissions trading (Treibhausgas-Emissionshandelsgesetz – TEHG ('Greenhouse Gas Emission Trading Act')), it is of great importance that the review process be as transparent as possible.

Against the background of the allocation of responsibilities laid down in the TEHG, a joint DEHSt / Länder competent authorities team 'specialist exchange of information on the Monitoring Guidelines' was set up with the aim of ensuring that the requirements laid out in the Monitoring Guidelines are implemented in a uniform manner in Germany. Numerous issues concerning the implementation of the Monitoring Guidelines have been addressed – both by the affected industrial associations and by Länder competent authorities involved in the assessment of existing monitoring concepts - and discussed in the team up to now. This time-consuming process of coordination and adjustment is currently well under way in Germany. The centre of attention is currently occupied by important issues relating to the monitoring concept; so far, it has not been possible to treat aspects of the reporting of emissions – the form and content of emission reports, electronic reporting format – and their verification. Hence this position paper does not deal with aspects concerning the reporting and verification of emissions.

Thus in our view, the review of the Monitoring Guidelines which the questionnaire has set in motion comes very early, at a time when hardly any experiences have been made with essential areas of monitoring, or even none at all, so that an assessment of the corresponding aspects of the Monitoring Guidelines is not possible. We assume that the situation is comparable in the other European member states, and we urge that the review process be carried on with the continued involvement of all the participating parties – to ensure the greatest possible degree of transparency – even after answers to the questionnaire have been given and the results discussed at the planned stakeholder day on 12 May 2005.

In the following, we take up positions with respect to certain aspects about which experiences have already been able to be collected. We have refrained thereby from undertaking an evaluation of the individual aspects addressed in the questionnaire using the categories set out in advance there. It did not seem possible to us to adequately capture and portray the complexity of the questions involved and the differentiation required to answer them using those categories. However, we have made reference – wherever possible – to the questions addressed in the questionnaire.

Accuracy and flexibility of the Monitoring Guidelines and whether they 'provide a level playing field' (part A, questions 1, 2 and 5 of the questionnaire)

The Monitoring Guidelines include various passages that opening clauses or provide scope for interpretation which require clearer definition in individual cases – and in some cases the approval or permission of the competent authorities. While this allows for greater flexibility with respect to the interpretation of the requirements of the Monitoring Guidelines in the individual member states, at the same time it provides considerable scope for interpretation which can lead to major inequalities of treatment between the individual member states. Such inequalities in interpretation give rise to significant competitive distortions among the operators of installations of a given sector in the different member states.

Thus, the issue of when a measure leads to excessively high costs or is economically unreasonable, so that the accuracy requirements of the next lower tier may be met, should be specified in the Monitoring Guidelines.

Likewise, the issue of sampling and of the frequency of sampling and analysis needs to be further specified. This aspect plays an essential role in determining the representative nature of the material-specific parameters that are identified, and thus the accuracy of the CO₂ emissions that are calculated on the basis of these; at the same time it is in many cases very costly and time-consuming. A clearer approach to the definition of minimal requirements for sampling / sampling frequency and for analysis is of particular relevance in this connection (this also concerns question 19 of the questionnaire).

Cost-effectiveness of the Monitoring Guidelines (part A, question 3 of the questionnaire)

Implementing the requirements of the Monitoring Guidelines in the short term can entail additional, sometimes very high, costs for the companies affected, above all if the intention is to attain and secure the necessary level of accuracy in determining and reporting emissions. In this context, simplifications should be permitted, where the need arises, on a time-limited basis during the first allocation period, if it is guaranteed that there is no significant

deterioration in the fulfilment of the accuracy requirements. A uniform simplification should be planned for instance with regard to the obligation to use laboratories accredited according to EN ISO 17025 for the determination of the material-specific parameters and/or sampling. It should be made possible in well-founded individual cases for sampling and analysis also to be performed by non-accredited external or company-internal laboratories, under the condition that additional testing for purposes of comparison is performed by accredited laboratories and the equipment and procedures of the non-accredited laboratories are assessed on a regular basis by accredited laboratories. The precise procedure and the frequency of these measures should be determined according to the accuracy requirements that need to be met by the installation in question – they should however be carried out at least once per year.

A further simplification should be made with respect to the oxidation factors; a uniform fixed value of 1 should be set. The value of 1.0 is justified on factual grounds, since when fuels are used the carbon they contain is generally converted 100 % into CO₂, even in cases where this does not result directly from the combustion process but comes about at some later point in time. A fixed value represents a substantial simplification for the companies without entailing any substantial loss of accuracy in determining and reporting emissions (this also concerns question 19 of the questionnaire).

Description of the standards to be used (ISO, CEN and national standards) (part C, question 10)

In principle, the enumeration of relevant standards by example seems to suffice. With regard to standardisation and simplification, it would be helpful if the standards that are developed (inter-)nationally were to be collected and coordinated and the usable standards published with regular updates on the WebPages of the EU Commission (not in the MRG). The effort expended in particular by small companies in researching to find relevant standards and in obtaining and evaluating them can in individual cases be inappropriately large.

Apart from this, it would be appropriate if the Monitoring Guidelines were to be applied in a uniform manner in such a way that in cases where no CEN standards are available, ISO standards are applied first, rather than – as in the Monitoring Guidelines – permitting the application of national standards at the same time. Only in cases where CEN- and ISO-standards are not available should resort be made to national standards (international standards should take precedence over national standards). Then draft standards should also be placed at the same level as national standards. The lowest level would then be represented by the industry guidelines (best practice guidelines). That would also mean that draft standards, which reflect the current state of the art in analysis techniques, would be treated “more justly”. In the current version of the Monitoring Guidelines, these are placed on the same level in the hierarchy as the industry guidelines.

Assessment of overall uncertainties for individual fuel or material streams

With regard to the assessment of overall uncertainties for determining the emissions from an installation, the Monitoring Guidelines refer to the information in Table 3 with the remark that these should be considered by the competent authority when evaluating or approving the monitoring methodology of a given installation (...). At the same time, the information in Table 3 is supposed only to have informative character.

On the one hand, it remains open how the overall uncertainty for individual fuel or material streams is to be determined. It is suggested that the overall uncertainties listed for CO₂ emissions should be calculated from individual uncertainties of the variables (consumption of fuel, calorific value, emission factor, composition, oxidation factor, conversion factor) for fuel and material streams according to the following equation:

$$U_G = \sqrt{U_{r1}^2 + U_{r2}^2 + \dots + U_{rn}^2}$$

where

U_G = overall uncertainty for individual fuel or material streams

U_{r1} to U_{rn} = uncertainty of the variables 1 to n

On the other hand, it is not made clear how much importance is placed on the result of checking the overall uncertainties. This should be clarified.

Definitions (sect. 2, Annex I MRG) and monitoring and reporting principles (sect. 3, Annex I MRG) (part C, questions 11 and 12 of the questionnaire)

The definitions given in sect. 2 of Annex I of the Monitoring Guidelines provide a sufficient explanation of the terms in most cases. Nevertheless, the following definitions should in our view be harmonised with definitions in other sets of European regulations and/or be made more precise:

- ♦ **Biomass:** The definition of biomass differs within the EU from one legal field to another (waste management, renewable energy sources, large combustion installations and emissions trading). For the future, the aim should be to use identical definitions.
- ♦ **Batch:** In the Monitoring Guidelines batch is defined in terms of the possibility of collecting a representative sample. The issue of when sampling leads to representative results should – as already discussed above – be made more precise for individual cases in the activity-specific Annexes of the Monitoring Guidelines, in particular, for cases involving use of secondary fuels, which can be characterised by a high degree of heterogeneity. For instance, in the case of solid fuels and materials with low bulk densities (e.g. processed domestic waste) which are delivered in defined amounts (e.g. truckloads), it should also be possible to combine several delivery loads of the same fuel (from the same producer/processing plant) under the term “batch”. This procedure also permits a representative sampling.

The principles on which the Monitoring Guidelines and monitoring are based present a useful aid to the interpretation of the various special requirements of the Monitoring Guidelines – for example, the requirements concerning quality assurance and quality control of data management.

Emission factors / oxidation factors / biomass fraction (part C, question 19 of the questionnaire; also part C, question 14, emission factors)

The distinction made in the Monitoring Guidelines between international and country-specific lists of emission factors which is to be applied, depending on the accuracy requirements that need to be met – i.e. the relevant level – when determining CO₂ emissions, should be eliminated and the corresponding levels combined. To ensure uniform implementation and

harmonisation of the monitoring process, the values to be used in each case should be the same in all countries; these values are material-specific and not country-specific values.

In developing such a list, care must be taken to ensure that it incorporates a sufficient degree of detail regarding the classes of materials (fuels), i.e. it should involve significantly more classes than the distinctions made among the emission factors so far in Table 4 of Annex I of the Monitoring Guidelines. For materials (fuels) with strongly fluctuating material parameters, on the other hand, no standard factors should be laid down; rather, a specific determination should always be demanded. This concerns especially materials (fuels) which – though they may in practice often be gathered together under a single collective term (such as secondary fuels, substitute fuels) – deviate significantly from one another with respect to their material parameters owing to their differing origin or different production methods.

On the oxidation factors, compare the discussion under “Cost-effectiveness of the Monitoring Guidelines”.

The determination of the biomass fraction needs to be more clearly defined. This should be done taking the following points into consideration:

- ♦ In principle, the specific procedures for determining the biomass fraction that are to be applied in the various cases, and the accompanying sampling, need to be coordinated with the competent authorities, and this aspect should be retained. Nevertheless, a more precise definition of the possible procedures – and where applicable, restrictions, e.g. no selective dissolution in the case of fuel mixtures containing secondary fuels and coal – should be included in the Monitoring Guidelines.
- ♦ There should be a general obligation to supply information on biomass content and also to include this in the calculation of emissions. Insofar as a more exact procedure is not possible, it should be made possible for biomass content – as already intended in the Monitoring Guidelines – to be estimated using a method that is agreed with the competent authorities.

Comments on the special aspects of particular sectors, or of individual annexes (part B, questions 7 and 8):

Combustion installations (Annex II of the Monitoring Guidelines)

- 1.) Determination of activity data: for some smaller installations – e.g. in the industrial sector – the mass balance approach can constitute a simplification. We therefore urge that this also be included in level 1 – as it is already in levels 2 and 3.
- 2.) Process emissions in combustion installations are supposed to be reported in accordance with sect. 2.1.2 of Annex II of the Monitoring Guidelines if carbonates are used “for SO₂ scrubbing from the waste gas stream”. We suggest that the formulation “for SO₂ sorption from the waste gas stream” be used here. This makes it clear that the quasi dry sorption and dry sorption procedures are included along with SO₂ scrubbing.

Refineries (Annex III of the Monitoring Guidelines)

In order to be able to control flare times and thus flare gas volumes, we propose that the Monitoring Guidelines should include an obligation to keep a flare logbook for refinery flares. Currently, the Monitoring Guidelines only permit emissions from refinery flares to be estimated. To ensure that estimates are as precise as possible, it is necessary that flare logbooks are kept to record information on malfunctions and shutdowns, as well as time, duration and estimated carbon quantity.

Coke ovens, roasting and sintering installations, iron/steel (Annexes IV, V and VI of the Monitoring Guidelines)

- 1.) The Monitoring Guidelines should require the keeping of a flare logbook, to ensure that flare times and hence flare gas volumes can be controlled (see also the explanation under refineries).
- 2.) The Monitoring Guidelines fail to clearly distinguish between “emissions from combustion” and “process emissions”. Thus, for example, the German allocation procedure recognises the stoichiometric requirement for reducing agents used with iron ore and other raw materials in the form of carbonates as process emissions. It is therefore not possible to classify individual material streams e.g. in a blast furnace as “reducing agents” or “fuel”, as intended in the Monitoring Guidelines, since one and the same material may fulfil both functions simultaneously.
- 3.) As far as methods are concerned, the Monitoring Guidelines leave open how the carbon content of derived gases (blast furnace gas or coke oven gas) is to be measured as a component of the emission factor. This needs to be formulated more precisely. The required measurement principle must encompass all carbon-containing components including CO₂, CO, CH₄ and other hydrocarbons. In cases where evaluation is performed using gas chromatography, companies should be permitted to make use of standard values (calorific values, carbon content) of the gas components identified.
- 4.) Instead of having to account for the carbon content of the steel types produced, or of the individual batches (in some cases, this would involve several hundred types of steel),

installations, including those with large-scale emissions, should be allowed to make general use of the standard value (level 1).

- 5.) With respect to additives and other chemicals used (e.g. CaC₂ calcium carbide), emitters should be permitted to determine the carbon content by calculation from technical purity, stoichiometry and molar mass, instead of having to measure the carbon content in each individual case.

Cement and lime (Annexes VII and VIII of the Monitoring Guidelines)

The calculation method B for determining clinker production described in the Monitoring Guidelines is partly impracticable and can hardly be applied. The use of clinker scales is not usual in the industry on account of the unreasonably high maintenance costs and generally low level of accuracy. Clinker production is calculated instead on the basis of a backwards calculation from the cement sent out and the consumption of other added materials used in the cement mills. We propose that this method of calculation should be allowed to be used in monitoring and be included in the guidelines.

Glass (Annex IX of the Monitoring Guidelines)

The calculation method B "alkali metal oxides" described in Annex IX was not applied in the German allocation procedure. The significance of this method needs to be checked at the European level and – in case no application is discernible – it should be deleted.

Ceramics products (Annex X of the Monitoring Guidelines)

- 1.) The ceramics industry in Germany includes a number of installations with very low-scale emissions, for whom the costs of applying the accuracy requirements of the Monitoring Guidelines are unreasonably high in comparison with other sectors. For this sector, different thresholds need to be formulated. The costs associated with analysis and accuracy requirements should be limited to the equivalent of the value of the entitlements for installations emitting < 10 kt CO₂ per year.
- 2.) Installations using carbonates are required by the levels concept to supply data with an accuracy of 2.5 % for installations with < 50 kt CO₂ and 1.0 % for installations with 50 - 500 kt CO₂. These requirements for analytic accuracy are unachievable for the ceramics industry and they should be made easier.
- 3.) Adherence to a level of overall uncertainty of 10 % is not achievable for the ceramics industry, an uncertainty level of 12.5 % is viewed as realistic.
- 4.) Since the composition of the basic material may alter during the course of a year, we recommend that samples of the basic material used be taken on a regular basis to obtain reliable information for the activity data. Sampling should take place once per month, so that a collective sample is produced over the course of the year, and an analysis should be performed at the end of the year. For the production of roof tiles and facing bricks, sampling should take place behind the press; the several raw materials for brick production should be sampled separately, because the basic material already contain porosifiers etc. after pressing. In cases where the amounts used fluctuate strongly, the

intervals at which samples are taken should be selected in such a way that the random samples are representative for roughly identical amounts (e.g. in seasonal production). This collective sample reflects the composition of the amounts used in the whole year; the costs are kept low by that fact that only one analysis is required. For calculating accuracy, a single fixed value should be allowed to be used in practice.

- 5.) The calculation method B of the Monitoring Guidelines is based on the amounts of ceramics products produced and treats alkali metal oxides as if these occur solely in the form of carbonates. This cannot be assumed in the case where natural clay is used as a raw material, for this reason calculation method B is not considered appropriate for the brick industry. The use of calculation method B is perfectly acceptable in other subsectors of the ceramics industry such as technical ceramics and other fine ceramics, which use synthetic or pure input materials. For this reason, we propose to cancel the calculation method B in cases involving use of natural clays or that it be tied to an obligation to prove that all alkali metal oxides / alkali earth metal oxides were also carbonates. The removal of calculation method B is compensated by several modes of analysis provided for by calculation method A, which is geared to the majority of brick manufacturers.
- 6.) An alternative calculation method which accords with the practical availability of the data should be introduced for coarse ceramics for the calculation of the emissions from the raw materials. For this, what is needed is a backwards calculation from the mass of the goods produced to the input quantity of the raw materials.

$$M_{\text{production output}} * \left(1 - \frac{\text{loss on ignition [\%]}}{100}\right) = M_{\text{Input}}$$

The production output comprises the saleable goods together with rejects from firing and packaging breakages.

The calculation of the emissions from the total organic carbon (TOC) in natural raw materials such as different types of clay must be performed additionally. The stoichiometric emission factor for carbon must be specified.

The conversion factor is assumed to be 1.

- 7.) Exhaust gas scrubbing is not usually found in the ceramics industry; instead dry sorption is used to separate hydrogen fluoride.

Pulp and paper production (Annex XI of the Monitoring Guidelines)

- 1.) In the light of experiences from the allocation procedure in Germany, the CO₂ emissions caused by the addition of carbonates in the recovery system and in the causticising area which are listed under process emissions under sect. 2.1.2 of Annex XI do not represent a relevant source of emissions. Rather, the decisive emissions come from the combustion, which is required to be monitored in accordance with the regulations of Annex II.
- 2.) On the use of secondary fuels:

- Secondary fuels (of fossil origin) with high carbonate content must be diagnosed as a combustion-related emissions source.
- A structure is required for waste products from paper manufacture which are used as secondary fuels across all sectors. The basis for such a structure could take the form of the waste types presented in Table 1 in accordance with the European Waste Catalogue.

Table 1: Waste products from paper production which are used as secondary fuels

Waste Key Number in accordance with the European Waste Catalogue	Description of waste type in accordance with the European Waste Catalogue
030301	Waste bark and wood
030305	De-inking sludges from paper recycling
030307	Mechanically separated rejects from pulping of waste paper and cardboard
030308	Wastes from sorting of paper and cardboard destined for recycling
030310	Fibre rejects, fibre-, filler- and coating-sludges from mechanical separation
030311	Sludges from on-site effluent treatment other than those mentioned in 03 03 10

- 3.) The questions surrounding the sampling and analysis processes used to determine C_{total} , TIC (total inorganic carbon), NCV_{total} (net caloric value), biomass and non-biomass carbon content of secondary fuels affects the pulp and paper industry in the same way as others. The aim must be to develop a uniform procedure.