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ANNEXES 1 to 3

## **ANNEXES**

**to the**

**Commission Implementing Regulation**

**amending and correcting Implementing Regulation (EU) 2018/2066 on the monitoring and reporting of greenhouse gas emissions pursuant to Directive 2003/87/EC of the European Parliament and of the Council**

## ANNEX I

Annexes I and X to Implementing Regulation (EU) 2018/2066 are amended as follows:

- (1) Annex I is amended as follows:
  - (a) in section 1, the following points are added:
    - ‘(8) where applicable, a description of the procedure used to assess if biomass source streams comply with the first subparagraph of Article 38(2);
    - (9) where applicable, a description of the procedure used to determine biogas quantities based on purchase records in accordance with paragraph 4 or 5 of Article 39.’;
  - (b) in point 2 of section 2, the following points are added:
    - ‘(f) where applicable, a description of the procedure used to assess if biofuels comply with the first subparagraph of Article 38(2);
    - (g) where applicable, a description of the procedure used to determine biofuel quantities based on purchase records in accordance with Article 54(3).’;
- (2) Annex X is amended as follows:
  - (a) in point 6 of section 1, point (a) is replaced by the following:
    - ‘(a) the total emissions expressed as t CO<sub>2(e)</sub>, including CO<sub>2</sub> from biomass source streams which do not comply with the first subparagraph of Article 38(2).’;
  - (b) in point 8 of section 1, point (d) is replaced by the following:
    - ‘(d) emissions, amounts and energy content of biomass fuels and bioliquids combusted, expressed in t and TJ, and information whether such biomass fuels and bioliquids comply with the first subparagraph of Article 38(2).’;
  - (c) section 2 is amended as follows:
    - (1) point 9 is replaced by the following:
      - ‘(9) Total CO<sub>2</sub> emissions in tonnes of CO<sub>2</sub> disaggregated by the Member State of departure and arrival, including CO<sub>2</sub> from biofuels which do not comply with Article 54(4).’;
    - (2) point 12 is replaced by the following:
      - ‘(12) Memo-items:
        - (a) amount of biofuels used during the reporting year (in tonnes or m<sup>3</sup>) listed per fuel type, and whether the biofuels comply with the first subparagraph of Article 38(2);
        - (b) the net calorific value of biofuels and alternative fuels.’;

## ANNEX II

Annexes II, IV and VI to Implementing Regulation (EU) 2018/2066 are amended as follows:

(1) Annex II is amended as follows:

(a) in the first paragraph of section 2, the second sentence is replaced by the following:

‘Where fuels or combustible materials which give rise to CO<sub>2</sub> emissions are used as a process input, section 4 of this Annex shall apply.’;

(b) section 4 is replaced by the following:

### **‘4. DEFINITION OF TIERS FOR THE CALCULATION FACTORS FOR CO<sub>2</sub> PROCESS EMISSIONS**

For all CO<sub>2</sub> process emissions, in particular for emissions from the decomposition of carbonates and from process materials containing carbon other than in form of carbonates, including urea, coke and graphite, where they are monitored using the standard methodology in accordance with Article 24(2), the tiers defined in this section for the applicable calculation factors shall be applied.

In case of mixed materials which contain inorganic as well as organic forms of carbon, the operator may choose:

- to determine a total preliminary emission factor for the mixed material by analysing the total carbon content, and using a conversion factor and – if applicable – biomass fraction and net calorific value related to that total carbon content; or
- to determine the organic and inorganic contents separately and treat them as two separate source streams.

For emissions from the decomposition of carbonates, the operator may choose for each source stream one of the following methods:

- (a) **Method A** (Input based): The emission factor, conversion factor and activity data are related to the amount of material input into the process.
- (b) **Method B** (Output based): The emission factor, conversion factor and activity data are related to the amount of output from the process.

For other CO<sub>2</sub> process emissions, the operator shall apply only method A.

#### **4.1 Tiers for the emission factor using Method A**

**Tier 1:** The operator shall apply one of the following:

- (a) the standard factors listed in Annex VI section 2 Table 2 in case of carbonate decomposition, or in Tables 1, 4 or 5 for other process materials;
- (b) other constant values in accordance with point (e) of Article 31(1), where no applicable value is contained in Annex VI.

**Tier 2:** The operator shall apply a country specific emission factor in accordance with point (b) or (c) of Article 31(1), or values in accordance with point (d) of Article 31(1).

**Tier 3:** The operator shall determine the emission factor in accordance with Articles 32 to 35. Stoichiometric ratios as listed in section 2 of Annex VI shall be used to convert composition data into emission factors, where relevant.

#### **4.2 Tiers for the conversion factor using Method A**

**Tier 1:** A conversion factor of 1 shall be used.

**Tier 2:** Carbonates and other carbon leaving the process shall be considered by means of a conversion factor with a value between 0 and 1. The operator may assume complete conversion for one or several inputs and attribute unconverted materials or other carbon to the remaining inputs. The additional determination of relevant chemical parameters of the products shall be carried out in accordance with Articles 32 to 35.

#### **4.3 Tiers for the emission factor using Method B**

**Tier 1:** The operator shall apply one of the following:

- (a) the standard factors listed in Annex VI section 2 Table 3.
- (b) other constant values in accordance with point (e) of Article 31(1), where no applicable value is contained in Annex VI.

**Tier 2:** The operator shall apply a country specific emission factor in accordance with point (b) or (c) of Article 31(1), or values in accordance with point (d) of Article 31(1).

**Tier 3:** The operator shall determine the emission factor in accordance with Articles 32 to 35. Stoichiometric ratios referred to in Annex VI section 2 Table 3 shall be used to convert composition data into emission factors assuming that all of the relevant metal oxides have been derived from respective carbonates. For this purpose the operator shall take into account at least CaO and MgO, and shall provide evidence to the competent authority as to which further metal oxides relate to carbonates in the raw materials.

#### **4.4 Tiers for the conversion factor using Method B**

**Tier 1:** A conversion factor of 1 shall be used.

**Tier 2:** The amount of non-carbonate compounds of the relevant metals in the raw materials, including return dust or fly ash or other already calcined materials, shall be reflected by means of conversion factors with a value between 0 and 1 with a value of 1 corresponding to a full conversion of raw material carbonates into oxides. The additional determination of relevant chemical parameters of the process inputs shall be carried out in accordance with Articles 32 to 35.

#### **4.5 Tiers for the net calorific value (NCV)**

If relevant, the operator shall determine the net calorific value of the process material using the tiers defined in section 2.2 of this Annex. NCV is considered not relevant for de-minimis source streams or where the material is not itself combustible without other fuels being added. If in doubt, the operator shall seek confirmation by the competent authority on whether NCV has to be monitored and reported.

#### **4.6 Tiers for the biomass fraction**

If relevant, the operator shall determine the biomass fraction of the carbon contained in the process material, using the tiers defined in section 2.4 of this Annex.’;

- (c) section 5 is deleted;
- (2) Annex IV is amended as follows:
  - (a) in subsection C.2 of section 1, the first paragraph is replaced by the following:

‘By way of derogation from section 4 of Annex II, process CO<sub>2</sub> emissions from the use of urea for scrubbing of the flue gas stream shall be calculated in accordance with Article 24(2) applying the following tiers.’;
  - (b) in section 4, subsection B is replaced by the following:

**‘B. Specific monitoring rules**

For the monitoring of emissions from metal ore roasting, sintering or pelletisation, the operator may choose to use a mass balance in accordance with Article 25 and section 3 of Annex II or the standard methodology in accordance with Article 24 and sections 2 and 4 of Annex II.’;
  - (c) section 9 is amended as follows:
    - (1) subsection A is replaced by the following:

**‘A. Scope**

The operator shall include at least the following potential sources of CO<sub>2</sub> emissions: calcination of limestone in the raw materials, conventional fossil kiln fuels, alternative fossil-based kiln fuels and raw materials, biomass kiln fuels (biomass wastes), non-kiln fuels, non-carbonate carbon content of limestone and shales and raw materials used for waste gas scrubbing.’;
    - (2) in subsection B, the second paragraph is replaced by the following:

‘CO<sub>2</sub> emissions related to dust removed from the process and non-carbonate carbon in the raw materials shall be added in accordance with subsections C and D of this section.’;
    - (3) in subsection D, the second paragraph is replaced by the following:

‘By way of derogation from section 4 of Annex II, the following tier definitions for the emission factor shall apply:

**Tier 1:** The content of non-carbonate carbon in the relevant raw material shall be estimated using industry best practice guidelines.

**Tier 2:** The content of non-carbonate carbon in the relevant raw material shall be determined at least annually following the provisions of Article 32 to 35.’;
- (d) section 10 is amended as follows:
  - (1) in subsection B, the first paragraph is replaced by the following:

‘Emissions from combustion shall be monitored in accordance with section 1 of this Annex. Process emissions from raw materials shall be monitored in accordance with section 4 of Annex II. Carbonates of calcium and magnesium shall be always taken into account. Other

carbonates and non-carbonate carbon in the raw material shall be taken into account, whenever they are relevant for emission calculation.’;

- (2) the following subsection is added:

**‘C. Emissions from non-carbonate carbon in raw materials**

The operator shall determine the emissions from non-carbonate carbon at least from limestone, shale or alternative raw materials in the kiln in accordance with Article 24(2).

By way of derogation from section 4 of Annex II, the following tier definitions for the emission factor shall apply:

**Tier 1:** The content of non-carbonate carbon in the relevant raw material shall be estimated using industry best practice guidelines.

**Tier 2:** The content of non-carbonate carbon in the relevant raw material shall be determined at least annually following the provisions of Article 32 to 35.

The following tier definitions for the conversion factor shall apply:

**Tier 1:** A conversion factor of 1 shall be applied.

**Tier 2:** The conversion factor shall be calculated applying industry best practice.’;

- (e) in subsection B of section 11, the first paragraph is replaced by the following:

‘Emissions from combustion, including flue gas scrubbing, shall be monitored in accordance with section 1 of this Annex. Process emissions from raw materials shall be monitored in accordance with section 4 of Annex II. Carbonates to be taken into account include at least  $\text{CaCO}_3$ ,  $\text{MgCO}_3$ ,  $\text{Na}_2\text{CO}_3$ ,  $\text{NaHCO}_3$ ,  $\text{BaCO}_3$ ,  $\text{Li}_2\text{CO}_3$ ,  $\text{K}_2\text{CO}_3$ , and  $\text{SrCO}_3$ . Only Method A shall be used. Emissions from other process materials including coke, graphite and coal dust shall be monitored in accordance with section 4 of Annex II.’;

- (f) section 12 is amended as follows:

- (1) subsection A is replaced by the following:

**‘A. Scope**

The operator shall include at least the following potential sources of  $\text{CO}_2$  emissions: kiln fuels, calcination of limestone/dolomite and other carbonates in the raw material, limestone and other carbonates for reducing air pollutants and other flue gas cleaning, fossil/biomass additives used to induce porosity including polystyrol, residues from paper production or sawdust, non-carbonate carbon content in the clay and other raw materials.’;

- (2) in subsection B, the first paragraph is replaced by the following:

‘Emissions from combustion including flue gas scrubbing shall be monitored in accordance with section 1 of this Annex. Process emissions from raw meal components and additives shall be monitored in accordance with section 4 of Annex II. For ceramics based on purified or synthetic clays the operator may use either Method A or Method B. For

ceramic products based on unprocessed clays and whenever clays or additives with significant non-carbonate carbon content are used, the operator shall use Method A. Carbonates of calcium shall be always taken into account. Other carbonates and non-carbonate carbon in the raw material shall be taken into account, where they are relevant for emission calculation.';

- (3) in Annex VI, Table 6 is replaced by the following:

*Table 6*

**Global warming potentials**

<b>Gas</b>	<b>Global warming potential</b>
N <sub>2</sub> O	265 t CO <sub>2(e)</sub> / t N <sub>2</sub> O
CF <sub>4</sub>	6 630 t CO <sub>2(e)</sub> / t CF <sub>4</sub>
C <sub>2</sub> F <sub>6</sub>	11 100 t CO <sub>2(e)</sub> / t C <sub>2</sub> F <sub>6</sub>

### ANNEX III

In section 8 of Annex IV to Implementing Regulation (EU) 2018/2066, subsection B of is corrected as follows: 'F<sub>CF2F6</sub>' is replaced by 'F<sub>C2F6</sub>'