

Commission Decision of 18 July 2007 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Parliament and of the Council (notified under document number C(2007) 3416) (Text with EEA relevance) (2007/589/EC) (repealed)

- Article 1 The guidelines for the monitoring and reporting of greenhouse gas...
- Article 2 Decision 2004/156/EC is repealed from the date referred to in...
- Article 3 This Decision shall apply from 1 January 2008.
- Article 4 This Decision is addressed to the Member States.
- Signature

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ANNEX I  
GENERAL GUIDELINES

1. INTRODUCTION
2. DEFINITIONS
3. MONITORING AND REPORTING PRINCIPLES
4. MONITORING OF GREENHOUSE GAS EMISSIONS
  - 4.1. BOUNDARIES
  - 4.2. CALCULATION AND MEASUREMENT-BASED METHODOLOGIES
  - 4.3. THE MONITORING PLAN
5. CALCULATION-BASED METHODOLOGIES FOR CO<sub>2</sub> EMISSIONS
  - 5.1. CALCULATION FORMULAE
    - Combustion emissions
    - Process emissions
  - 5.2. TIERS OF APPROACHES
    - Table 1 Minimum requirements ('n.a.' means 'not applicable') Column A for 'category...' ('n.a.' means 'not applicable') Column A for 'category A installations'...
  - 5.3. FALL-BACK APPROACHES
  - 5.4. ACTIVITY DATA
  - 5.5. EMISSION FACTORS
  - 5.6. OXIDATION AND CONVERSION FACTORS
  - 5.7. TRANSFERRED CO<sub>2</sub>
6. MEASUREMENT-BASED METHODOLOGIES
  - 6.1. GENERAL
  - 6.2. TIERS FOR MEASUREMENT-BASED METHODOLOGIES
  - 6.3. FURTHER PROCEDURES AND REQUIREMENTS
    - (a) Sampling rates
    - (b) Missing data

- (i) Concentrations
    - (ii) Other parameters
  - (c) Corroborating calculation of emissions
- 7. UNCERTAINTY ASSESSMENT
  - 7.1. CALCULATION
    - (a) for uncertainty of a sum (e.g. of individual contributions to...
    - (b) for uncertainty of a product (e.g. of different parameters used...
  - 7.2. MEASUREMENT
- 8. REPORTING
- 9. RETENTION OF INFORMATION
- 10. CONTROL AND VERIFICATION
  - 10.1. DATA ACQUISITION AND HANDLING
  - 10.2. CONTROL SYSTEM
  - 10.3. CONTROL ACTIVITIES
    - 10.3.1. PROCEDURES AND RESPONSIBILITIES
    - 10.3.2. QUALITY ASSURANCE
    - 10.3.3. REVIEWS AND VALIDATION OF DATA
    - 10.3.4. OUTSOURCED PROCESSES
    - 10.3.5. CORRECTIONS AND CORRECTIVE ACTION
    - 10.3.6. RECORDS AND DOCUMENTATION
  - 10.4. VERIFICATION
    - 10.4.1. GENERAL PRINCIPLES
    - 10.4.2. VERIFICATION METHODOLOGY
      - (a) strategic analysis
      - (b) risk analysis
      - (c) verification
      - (d) internal verification report
      - (e) verification report
- 11. EMISSION FACTORS
- 12. LIST OF CO<sub>2</sub>-NEUTRAL BIOMASS
  - Group 1 — Plants and parts of plants:
  - Group 2 — Biomass wastes, products and by-products:
  - Group 3 — Biomass fractions of mixed materials:
  - Group 4 — Fuels whose components and intermediate products have...
- 13. DETERMINATION OF ACTIVITY-SPECIFIC DATA AND FACTORS
  - 13.1. DETERMINATION OF NET CALORIFIC VALUES AND EMISSION FACTORS FOR FUELS...
  - 13.2. DETERMINATION OF ACTIVITY-SPECIFIC OXIDATION FACTORS
  - 13.3. DETERMINATION OF PROCESS EMISSION FACTORS, CONVERSION FACTORS AND COMPOSITION DATA...
  - 13.4. DETERMINATION OF A BIOMASS FRACTION
  - 13.5. REQUIREMENTS FOR DETERMINATION OF FUEL AND MATERIAL PROPERTIES
    - 13.5.1. USE OF ACCREDITED LABORATORIES
    - 13.5.2. USE OF NON-ACCREDITED LABORATORIES
      - (a) validation

- (b) inter-comparison
  - 13.5.3. ONLINE GAS ANALYSERS AND GAS CHROMATOGRAPHS
    - (a) initial validation
    - (b) annual inter-comparison
- 13.6. SAMPLING METHODS AND FREQUENCY OF ANALYSES
- 14. REPORTING FORMAT
  - 14.1. IDENTIFICATION OF INSTALLATION
  - 14.2. OVERVIEW OF ACTIVITIES
  - 14.3. COMBUSTION EMISSIONS (CALCULATION)
  - 14.4. PROCESS EMISSIONS (CALCULATION)
  - 14.5. MASS-BALANCE APPROACH
  - 14.6. MEASUREMENT APPROACH
- 15. REPORTING CATEGORIES
  - 15.1. IPCC REPORTING FORMAT
  - 15.2. SOURCE CATEGORY CODE
- 16. REQUIREMENTS FOR INSTALLATIONS WITH LOW EMISSIONS

## ANNEX II

Guidelines for combustion emissions from activities  
as listed in Annex I to Directive 2003/87/EC

- 1. BOUNDARIES AND COMPLETENESS
- 2. DETERMINATION OF CO<sub>2</sub> EMISSIONS
  - 2.1. CALCULATION OF CO<sub>2</sub> EMISSIONS
    - 2.1.1. COMBUSTION EMISSIONS
      - 2.1.1.1. GENERAL COMBUSTION ACTIVITIES
        - (a) activity data
          - (a1) fuel consumed:
            - Tier 1
            - Tier 2
            - Tier 3
            - Tier 4
          - (a2) net calorific value
            - Tier 1
            - Tier 2a
            - Tier 2b
            - Tier 3
        - (b) emission factor
          - Tier 1
          - Tier 2a
          - Tier 2b
          - Tier 3
        - (c) oxidation factor
          - Tier 1
          - Tier 2
          - Tier 3

- 2.1.1.2. MASS-BALANCE APPROACH — CARBON BLACK PRODUCTION AND GAS PROCESSING TERMINALS...
  - (a) activity data
    - Tier 1
    - Tier 2
    - Tier 3
    - Tier 4
  - (b) carbon content
    - Tier 1
    - Tier 2
- 2.1.1.3. FLARES
  - (a) activity data
    - Tier 1
    - Tier 2
    - Tier 3
  - (b) emission factor
    - Tier 1
    - Tier 2a
    - Tier 2b
    - Tier 3
  - (c) oxidation factor
    - Tier 1
    - Tier 2
- 2.1.2. PROCESS EMISSIONS
  - Calculation method A — carbonate based
    - (a) activity data
      - Tier 1
    - (b) emission factor
      - Tier 1
  - Calculation method B — gypsum based
    - (a) activity data
      - Tier 1
    - (b) emission factor
      - Tier 1
- 2.2. MEASUREMENT OF CO<sub>2</sub> EMISSIONS

### ANNEX III

Activity-specific guidelines for mineral oil refineries  
as listed in Annex I to Directive 2003/87/EC

1. BOUNDARIES
2. DETERMINATION OF CO<sub>2</sub> EMISSIONS
  - 2.1. CALCULATION OF CO<sub>2</sub> EMISSIONS
    - 2.1.1. COMBUSTION EMISSIONS
    - 2.1.2. PROCESS EMISSIONS
      1. Catalytic cracker regeneration, other catalyst regeneration and flexi-cokers
        - Tier 1
        - Tier 2
        - Tier 3

- 2. Refinery hydrogen production
    - (a) activity data
      - Tier 4
      - Tier 1
      - Tier 2
    - (b) emission factor
      - Tier 1
      - Tier 2
- 2.2. MEASUREMENT OF CO2 EMISSIONS

#### ANNEX IV

Activity-specific guidelines for coke ovens as listed in Annex I to Directive 2003/87/EC

- 1. BOUNDARIES AND COMPLETENESS
- 2. DETERMINATION OF CO2 EMISSIONS
  - 2.1. CALCULATION OF CO2 EMISSIONS
    - 2.1.1. MASS-BALANCE APPROACH
      - (a) activity data
        - Tier 1
        - Tier 2
        - Tier 3
        - Tier 4
      - (b) carbon content
        - Tier 1
        - Tier 2
        - Tier 3
    - 2.1.2. COMBUSTION EMISSIONS
    - 2.1.3. PROCESS EMISSIONS
      - (a) activity data
        - (a1) fuel employed as process input
          - Tier 1
          - Tier 2
          - Tier 3
          - Tier 4
        - (a2) net calorific value
          - Tier 1
          - Tier 2
          - Tier 3
      - (b) emission factor
        - Tier 1
        - Tier 2
        - Tier 3
  - 2.2. MEASUREMENT OF CO2 EMISSIONS

#### ANNEX V

Activity-specific guidelines for metal ore roasting and sintering installations as listed in Annex I to Directive 2003/87/EC

- 1. BOUNDARIES AND COMPLETENESS

2. DETERMINATION OF CO<sub>2</sub> EMISSIONS
  - 2.1. CALCULATION OF CO<sub>2</sub> EMISSIONS
    - 2.1.1. MASS-BALANCE APPROACH
      - (a) activity data
        - Tier 1
        - Tier 2
        - Tier 3
        - Tier 4
      - (b) carbon content
        - Tier 1
        - Tier 2
        - Tier 3
    - 2.1.2. COMBUSTION EMISSIONS
    - 2.1.3. PROCESS EMISSIONS
      - (a) activity data
        - Tier 1
        - Tier 2
      - (b) emission factor
        - Tier 1
      - (c) conversion factor
        - Tier 1
        - Tier 2
  - 2.2. MEASUREMENT OF CO<sub>2</sub> EMISSIONS

## ANNEX VI

Activity-specific guidelines for installation for the production of pig iron and steel including continuous casting as listed in Annex I to Directive 2003/87/EC

1. BOUNDARIES AND COMPLETENESS
2. DETERMINATION OF CO<sub>2</sub> EMISSIONS
  - 2.1. CALCULATION OF CO<sub>2</sub> EMISSIONS
    - 2.1.1. MASS-BALANCE APPROACH
      - (a) activity data
        - Tier 1
        - Tier 2
        - Tier 3
        - Tier 4
      - (b) carbon content
        - Tier 1
        - Tier 2
        - Tier 3
    - 2.1.2. COMBUSTION EMISSIONS
    - 2.1.3. PROCESS EMISSIONS
      - (a) activity data
        - (a1) mass flows
          - Tier 1
          - Tier 2
          - Tier 3
          - Tier 4
        - (a2) net calorific value (if applicable)

- Tier 1
    - Tier 2
    - Tier 3
  - (b) emission factor
    - Tier 1
    - Tier 2
    - Tier 3
- 2.2. MEASUREMENT OF CO<sub>2</sub> EMISSIONS

## ANNEX VII

Activity-specific guidelines for installations for the production of cement clinker as listed in Annex I to Directive 2003/87/EC

1. BOUNDARIES AND COMPLETENESS
2. DETERMINATION OF CO<sub>2</sub> EMISSIONS
  - 2.1. CALCULATION OF CO<sub>2</sub> EMISSIONS
    - 2.1.1. COMBUSTION EMISSIONS
    - 2.1.2. PROCESS EMISSIONS
      - 2.1.2.1. CO<sub>2</sub> from clinker production
        - Calculation method A — kiln input based
        - (a) activity data
          - Tier 1
          - Tier 2
          - Tier 3
        - (b) emission factor
          - Tier 1
        - (c) conversion factor
          - Tier 1
          - Tier 2
      - Calculation method B — clinker output based
    - EMISSIONS RELATED TO CLINKER OUTPUT
      - (a) activity data
        - Tier 1
        - Tier 2
      - (b) emission factor
        - Tier 1
        - Tier 2
        - Tier 3
      - (c) conversion factor
        - Tier 1
        - Tier 2
    - 2.1.2.2. EMISSIONS RELATED TO DISCARDED DUST
      - (a) activity data
        - Tier 1
        - Tier 2
      - (b) emission factor
        - Tier 1
        - Tier 2

2.1.2.3. EMISSIONS FROM NON-CARBONATE CARBON IN  
RAW MEAL

- (a) activity data
    - Tier 1
    - Tier 2
  - (b) emission factor
    - Tier 1
    - Tier 2
  - (c) conversion factor
    - Tier 1
    - Tier 2
- 2.2. MEASUREMENT OF CO<sub>2</sub> EMISSIONS

## ANNEX VIII

Activity-specific guidelines for installations for the production  
of lime as listed in Annex I to Directive 2003/87/EC

- 1. BOUNDARIES AND COMPLETENESS
- 2. DETERMINATION OF CO<sub>2</sub> EMISSIONS
  - 2.1. CALCULATION OF CO<sub>2</sub> EMISSIONS
    - 2.1.1. COMBUSTION EMISSIONS
    - 2.1.2. PROCESS EMISSIONS
      - Calculation method A — carbonates
        - (a) activity data
          - Tier 1
          - Tier 2
          - Tier 3
        - (b) emission factor
          - Tier 1
        - (c) conversion factor
          - Tier 1
          - Tier 2
      - Calculation method B — alkali earth oxides
        - (a) activity data
          - Tier 1
          - Tier 2
        - (b) emission factors
          - Tier 1
        - (c) conversion factor
          - Tier 1
          - Tier 2
    - 2.2. MEASUREMENT OF CO<sub>2</sub> EMISSIONS

## ANNEX IX

Activity-specific guidelines for installations for the manufacture  
of glass as listed in Annex I to Directive 2003/87/EC

- 1. BOUNDARIES AND COMPLETENESS



- 2. DETERMINATION OF CO<sub>2</sub> EMISSIONS
  - 2.1. CALCULATION OF CO<sub>2</sub> EMISSIONS
    - 2.1.1. COMBUSTION EMISSIONS
    - 2.1.2. PROCESS EMISSIONS
      - (a) activity data
        - Tier 1
        - Tier 2
      - (b) emission factor
        - Carbonates
          - Tier 1
          - Tier 2
  - 2.2. MEASUREMENT OF CO<sub>2</sub> EMISSIONS

## ANNEX X

Activity-specific guidelines for installations for the manufacture of ceramic products as listed in Annex I to Directive 2003/87/EC

- 1. BOUNDARIES AND COMPLETENESS
- 2. DETERMINATION OF CO<sub>2</sub> EMISSIONS
  - 2.1. CALCULATION OF CO<sub>2</sub> EMISSIONS
    - 2.1.1. COMBUSTION EMISSIONS
    - 2.1.2. PROCESS EMISSIONS
      - 2.1.2.1. CO<sub>2</sub> FROM INPUT MATERIAL
        - Calculation method A — carbon inputs
          - (a) activity data
            - Tier 1
            - Tier 2
            - Tier 3
          - (b) emission factor
            - Tier 1
            - Tier 2
            - Tier 3
          - (c) conversion factor
            - Tier 1
            - Tier 2
        - Calculation method B — alkali earth oxides
          - (a) activity data
            - Tier 1
            - Tier 2
            - Tier 3
          - (b) emission factor
            - Tier 1
            - Tier 2
            - Tier 3
          - (c) conversion factor
            - Tier 1
            - Tier 2
      - 2.1.2.2. CO<sub>2</sub> FROM LIMESTONE FOR REDUCING AIR POLLUTANTS AND OTHER FLUE...
        - (a) activity data

- Tier 1
- (b) emission factor
- Tier 1
- 2.2. MEASUREMENT OF CO2 EMISSIONS

#### ANNEX XI

Activity-specific guidelines for pulp and paper producing  
installations as listed in Annex I to Directive 2003/87/EC

- 1. BOUNDARIES AND COMPLETENESS
- 2. DETERMINATION OF CO2 EMISSIONS
  - 2.1. CALCULATION OF CO2 EMISSIONS
    - 2.1.1. COMBUSTION EMISSIONS
    - 2.1.2. PROCESS EMISSIONS
      - (a) activity data
        - Tier 1
        - Tier 2
      - (b) emission factor
        - Tier 1
  - 2.2. MEASUREMENT OF CO2 EMISSIONS

#### ANNEX XII

Guidelines for determination of greenhouse gas  
emissions by continuous emission measurement systems

- 1. BOUNDARIES AND COMPLETENESS
- 2. DETERMINATION OF GREENHOUSE GAS EMISSIONS
  - Tier 1
  - Tier 2
  - Tier 3
  - Tier 4
  - Overall approach
    - GHG concentration
    - Flue gas flow
      - METHOD A
      - METHOD B

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*Status: This is the original version (as it was originally adopted).*

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- (1) OJ L 275, 25.10.2003, p. 32. Directive as amended by Directive 2004/101/EC (OJ L 338, 13.11.2004, p. 18).
- (2) OJ L 59, 26.2.2004, p. 1.
- (3) OJ L 33, 4.2.2006, p. 1.
- (4) OJ L 167, 9.7.1993, p. 31. Decision as last amended by Regulation (EC) No 1882/2003 of the European Parliament and of the Council (OJ L 284, 31.10.2003, p. 1).