Annex II_v2021
Recommended Structure for Informative Inventory Report
(IIR)
(in UNECE language, preferably in English)

CONTENT

Executive Summary (in English – to be updated yearly)

(As some parts of the requested information can be extensive, the information can also be presented under subchapters to Chapter 1 (Introduction))

- Date of update
- Summary of the main differences in the inventory since the last submission (new sources, methods applied, revised energy balances or other activity data etc)
- Explanation of significant changes in emission trends,
- Highlight any incompleteness or time-series inconsistencies in the estimates
- Highlight priorities for improvement
- Information on recalculation – main reasons for recalculations, explanation of significant recalculations
- Information on which source sectors include the condensable component of PM_{10} and $PM_{2.5}$ and reference to relevant chapters/appendices of the report
- Explanation of differences between reported national totals presented in Annex IV Table 1 (if any) (e.g. national total for the entire territory, national total for the EMEP grid domain)
- Clarification of the reason for differences in reported national totals for the entire territory with NECD and UNFCCC reports

Chapter 1. Introduction

1.1 National Inventory Background 1.2 Institutional arrangements (to be updated when there have been major changes since the last report)

- Date when these sections were last updated
- A description of the legal and institutional arrangement for inventory preparation, institutional responsibilities for the inventory planning, preparation and management
- Documentation and archiving system
- Inventory improvement process (a description of how improvements are prioritised)

1.3 Inventory preparation process (to be updated when there have been major changes since the last report)

- Date when this section was last updated
- A brief description of the process of inventory preparation (e.g. data collection, data processing, data storage, data base systems, procedures and archiving)

1.4 Methods and data sources (to be updated when there have been changes since the last report)

- Date when this section was last updated
- Brief general description of methodologies and data sources used. Overview of what is used in the national inventory in terms of country specific or default (i.e. EMEP/EEA Guidebook) emission factors, highlight which version of the Guidebook is used for default emission factors and methods. Please note that in line with Reporting Guidelines paragraph 19 Parties shall as a minimum use the methodologies in the latest version of the EMEP/EEA Guidebook
- Information of activity data sources and information on cases where data differs from national statistics (*please provide detailed description under Chapters 3-9 Methods and Data Sources)*

1.5 Key Categories (to be updated each year)

- Explanation of methods used to determine key categories
- List of key categories by pollutant

1.6 QA/QC and Verification methods

- Date when this section was last updated
- Identification of quality assurance/quality control (QA/QC) used to ensure quality and time-series consistency of the inventory
- Description of verification methods (e.g. is the inventory data compared to point source information or in-situ air quality measurements or neighbour state estimates or satellite data?)

1.7 General uncertainty evaluation

- Date when this section was last updated
- Description of methods used to assess uncertainty and the use of uncertainty analysis to prioritise inventory improvement
- Summary of uncertainties by pollutant and sector

1.8 General Assessment of Completeness (to be updated each year):

i) Sources Not Estimated (NE)

- List of sources not estimated in the inventory. Information on reasons why not estimated (NE) notation keys are used (e.g. missing activity data or methods, or the respective source is assumed to be negligible, etc)
- A qualitative assessment of their importance, currently and in future
- Highlight plans to calculate these sources in future or provide an explanation of why there are no such plans

ii) Sources Included Elsewhere (IE)

- Identification of sources included elsewhere in Annex IV Table 1 and not assigned to a specific NFR
- Justification of the decision to aggregate these sectors rather than report the data under specific NFR categories, and intentions for future disaggregation aggregation

iii) Other notation keys

- Description of the use of other notation keys in the inventory

Chapter 2: EXPLANATION OF KEY TRENDS (to be updated each year)

- Description of any time series inconsistencies.
- Explanation of significant changes in the time trend for key categories and pollutants (i.e. dips and jumps) and explanation of **steady /permanent decreases (or increases)** of emissions to enable a reviewer or data user to be confident that the changes result from changes in the activity/abatement/process of the source and not as a result of different methods or source data used for different years.

Chapters 3 – 9 SECTORAL METHODOLOGIES:

For the following 7 chapters (chapters 3 – 9)

This part of the IIR presents category by category (NFR) details on methodologies for emission estimation including data sources, assumptions, use of emission factors and uncertainties. Please note that information is needed detailed enough to understand how the emissions were estimated. Information to be provided covers activity data, emission factors/methods, assumptions, the tier level of the method (tier 1, 2 or 3) and references to the data sources. If methods and data sources differ between some pollutants then these differences should be explained . Detailed descriptions and tables can also be provided in Appendix 2.

Chapter 3: ENERGY (NFR sector 1)

(to be updated when there have been changes since the last submission)

- Date when this section was last updated
- Information on emission sources occurring within the Party (combustion and abatement technologies, fuels)
- Information on emission trends and drivers behind the trends
- Presentation of energy balance (including feedstocks) and energy statistics for key categories including a description of the basis of mobile combustion estimates (e.g. fuel combusted or on fuel sold basis)
- Presentation of activity data (fuel consumption, fuel characteristics such as LHV, sulphur content…)
- Description of assumptions made, emission factors and methods used in the calculations
- In case country specific methods are used, please provide information of the method and reference to the related documentation
- References to data sources
- Information of whether the emission factors used/emission data included for PM_{10} and $PM_{2.5}$ include or exclude the condensable component

  As a minimum the following information is suggested to be included:
- Were country specific or default emission factors used for the calculation of emissions, especially from 1A4bi
- 1. In case default values were used, please indicate for each fuel used:
- a. which version of the Guidebook was used[1]
- b. which tier method was used?
- 2. In case country specific methods or emission values were used:
- a. Was the condensable component of PM emissions consistently included in the measurements?
- Identification of changes (recalculations) in activity data or estimation methodologies.
- Quantitative or qualitative assessment of uncertainties per NFR or sector group.
- Planned improvements.
- Memo Items (transport emissions not included in national totals)

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[1] Please note that according to Reporting Guidelines paragraph 19 Parties shall as a minimum use the methodologies in the latest version of the EMEP/EEA Guidebook)

Chapter 4: INDUSTRIAL PROCESSES AND PRODUCT USE (NFR sector 2)

(to be updated when there have been changes since the last submission)

- Date when this section was last updated
- Information on emission sources occurring within the Party (industrial activities, process and abatement technologies)
- Information on emission trends and drivers behind the trends
- Presentation of activity data e.g. production statistics, solvents and paints consumed, % solvent based paints etc.
- Explanation of assumptions made, emission factors and methodologies used to calculate emission estimates
- References to the data sources
- In case of country specific methods, please provide information of the method and/or reference to the related documentation
- Information of whether PM_{10} and $PM_{2.5}$ emission estimates include or exclude the condensable component.
- Identification of changes (recalculations) in activity data or estimation methodologies.
- Quantitative or qualitative assessment of uncertainties per NFR or sector group.
- Planned improvements

Chapter 5: AGRICULTURE (NFR sector 3)

(to be updated when there have been changes since the last submission)

- Date when this section was last updated.
- Information on emission sources occurring within the Party (animal species, activities, practices)
- Information on emission trends and drivers behind the trends
- Presentation of activity data e.g. animal population and fertilizer statistics for key categories.
- Explanation of assumptions made, emission factors and methods used to calculate emission estimates
- References to the data sources
- In case of country specific methods, please provide information of the method and/or reference to the related documentation.
- Information of whether the emission factors used for PM_{10} and $PM_{2.5}$/emission data included include or exclude the condensable component
- Identification of changes (recalculations) in activity data or estimation methodologies
- Quantitative or qualitative assessment of uncertainties per NFR or sector group.
- Planned improvements.

Chapter 6: WASTE (NFR sector 5)

(to be updated when there have been changes since the last submission)

- Date when this section was last updated
- Information on emission sources occurring within the Party (activities, practices)
- Information on emission trends and drivers behind the trends
- Presentation of activity data e.g. municipal waste, % waste incinerated
- Explanation of assumptions made, emission factors and methods used to calculate emission estimates
- References to data sources
- In case of country specific emission methods, please provide information of the method and/or reference to the related documentation
- Information of whether the emission factors used for PM_{10} and $PM_{2.5}$ /emission data included include or exclude the condensable component)
- Identification of changes (recalculations) in estimation methodologies.
- Quantitative or qualitative assessment of uncertainties per NFR or sector group.
- Planned Improvements.

Chapter 7: OTHER AND NATURAL EMISSIONS

(to be updated when there have been changes since the last submission)

Date when this section was last updated.

Other (NFR 6A, 6B)
- Information on emission sources occurring within the Party (activities, technologies/practices)
- Information on emission trends and drivers behind the trends
- Presentation of activity statistics
- List of sources included in Other indicating which are included in national totals and which are not included and why.
- Explanation of methods used to calculate emission estimates for key categories and other sources. Including: use of country specific emission factors, activity statistics, assumptions and methods and reference to default guidebook factors used for other sectors per NFR code or sector group as appropriate and where transparency permits (including clear indication of whether the emission factors used for PM_{10} and $PM_{2.5}$/emission data included include or exclude the condensable component).
- Identification of changes (recalculations) in estimation methodologies.
- Quantitative or qualitative assessment of uncertainties per NFR or sector group.
- Planned Improvements.

Natural emissions (11A, 11B, 11C)
- Information on emission sources occurring within the Party
- Information on emission trends and drivers behind the trends

- Presentation of activity statistics e.g forest land , grassland etc. ,
- Explanation of methods used to calculate emission estimates
- Identification of changes (recalculations) in estimation methodologies
- Quantitative or qualitative assessment of uncertainties per NFR or sector group.

Chapter 8: RECALCULATIONS AND IMPROVEMENTS (to be updated each year)

8.1 Recalculations

- Summary of recalculations (by sector, year and pollutant)
- Highlight implications for the inventory totals and trends with reference to the new methods documented in Chapters 3-7.
- Specify what changes have been implemented or which new sources added to the inventory with comparison to what is documented in Chapters 3-7
- Overview of recalculations that have occurred since the base year of each Protocol (relevant for assessment of compliance with each Protocol) (including a description of sources that were not included in the base year but have been added since or sources that were included in the base year and are no longer applicable)

8.2 Planned improvements

Summary of planned programmes of improvement. (Reference detailed descriptions in Chapters 3 – 9 above)

8.3 Status of implementation of ERTs in-depth review recommendations (CLRTAP stage 3 review and if applicable NECD review)

(Please provide the status of all recommendations from the last review and also from previous reviews if the recommendations have not been implemented)

- Status of implementation of all recommendations from the last review and also from previous reviews
- Provide information on the progress with clear steps and a schedule for implementation if recommendations have not been (fully) implemented

Chapter 9: PROJECTIONS

(to be updated every 2/4 years or when there have been changes since the last submission)

- Description by source sector of methods and models data sources and assumptions used for estimating projected emissions and activity data reported in Annex IV Tables ANNEX IV A-WM, ANNEX IV B-WM, ANNEX IV A-WaM, ANNEX IV B-WaM
  Include references to detailed documentation (where this is available). e.g.
Overview of data sources, methods and models
- a) projections with measures (WM) ;
- b) projections with additional measures WAM (where appropriate)
- Explanations of circumstances justifying emissions that are temporarily higher than the ceilings/emission reduction commitments established for it for one or more pollutants after 2010/2020
- Sensitivity
- Time series consistency with historic inventory

Sectoral Methods
- 9.1 Energy
- 9.1.1 Stationary Combustion
- 9.1.2 Mobile Combustion
- 9.2 Industrial Processes and Product Use
- 9.3 Agriculture
- 9.4 Waste

Chapter 10: REPORTING OF GRIDDED EMISSIONS AND LPS

(to be updated every 4 years or when there have been changes since the last submission)

Date when this section was last updated.
- List of years and pollutants in gridded and LPS data set
- Identification of changes due to corrections or recalculations (see Chapter 8) in estimation methodologies for individual GNFR categories and national totals
- Description of methods used by the Party to grid sectoral emission and which data sources have been used in this process
Include a table per GNFR (as a minimum, but ideally at higher level of detail as relevant) describing:
  - The Tier that the country has used for the spatial distribution
  - Information of what type of activity datasets are used for the spatial distribution
- Indication if gridded data comprise all emissions, or if point sources are provided separately (e.g. in the LPS submission)
- Confirmation that LPS data, gridded data and inventory data are consistent. If these datasets are not consistent: explanation of the reason for the differences
- Description of LPS reporting, completeness assessment of LPS information
- Planned improvements

Chapter 11: ADJUSTMENTS

Parties may apply to adjust their emission reduction commitments or inventory data in extraordinary circumstances, as defined in EMEP Executive Body decisions 2012/3 and 2012/4 (see ECE/EB.AIR/111/Add.1) and amended by EB decision 2014/1. The decisions include the detailed lists of supporting information which must be provided in an IIR or in a separate report. The lists of required information are therefore not repeated here.

Paragraph 6 of Decision 2012/3 lists the extraordinary circumstances under which adjustments may be applied.

Paragraph 2 of Decision 2012/12 lists the supporting documentation required for a Party applying for an adjustment to its emission inventory or emission reduction commitment.

Paragraphs 8-13 of Decision 2012/12 lists the information that Parties applying an adjustment to annually reported emission inventories shall provide.

For each individual emission source category for which an adjustment procedure is relevant, Parties shall report the adjusted emission estimate using the template available as a separate Annex to the Emission Reporting Guidelines. Each Party shall also prepare and report the 'adjusted' national total emission estimate in the main worksheet of the NFR reporting template.

In particular, in a separate Adjustments chapter of their Informative Inventory Report (this section), or in a separate report, Parties that report adjusted emission estimates shall detail the methodology, data and emission factors for each year used in preparing the adjusted emission estimate. The adjusted emission estimates documented in the Informative Inventory Report shall be identical to those reported in the main worksheet of the NFR reporting template.

REFERENCES (To be updated each year)

IIR Appendices (to be updated as appropriate)

Appendices can be also provided in an Excel format as an Annex to the IIR

Appendix 1: Key category analysis

Appendix 2: Detailed methodological descriptions for individual source categories (where relevant), if available including a table summarising whether source sectors use PM emission factors that include/exclude the condensable component (see below).

Appendix 3: Further elaboration of completeness, uses of NE & IE and (potential) sources of air pollutant emissions excluded (where relevant)

Appendix 4: National energy balance (optional - useful for review process)

Appendix 5: Additional information to be considered part of the IIR submission (where relevant) or other useful information

Appendix 6: Optional Summary Information on Condensable in PM

Appendix 7: Other appendices (any other relevant information – optional)