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INTERGOVERNMENTAL PANEL ON climate change

Task Force on National Greenhouse Gas Inventories (TFI)

IPCC Emission Factor Database (EFDB)

EFDB Procedures

For the IPCC Task Force Bureau on National Greenhouse Gas Inventories

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Background

1. The IPCC Emission Factor Database (EFDB) is developed under the work plan endorsed by the Task Force Bureau (TFB) of the IPCC Task Force on National Greenhouse Gas Inventories (TFI) and launched in 2002.

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2. The overall objective of the EFDB is to be an always up-to-date companion for the IPCC Guidelines for national greenhouse gas (GHG) inventories.

(i) A primary objective is to be a repository or library of emission factors (EFs) measurements which could be analysed to support the transparency, traceability, accuracy and stability of IPCC default EFs.

(ii) A secondary objective is to be as a searchable database for users to obtain EFs for use in national inventories. The responsibility of using the information in the EFDB appropriately will always remain with the expert using it.

3. The EFDB will complement the information on EFs and other parameters given in the IPCC Guidelines.

Management of the EFDB

4. The TFB has a supervisory role as they are responsible for the activities of the IPCC's TFI. The quality assurance of the EFDB will be overseen by an Editorial Board.

EFDB Data Procedures

5. A primary objective of the EFDB is to be a repository or library of EFs measurements which could be analysed to support the transparency, traceability and accuracy/stability of IPCC default EFs.

6. To meet this objective, submitted data into the EFDB must be applicable for use in national inventories and meet the quality standards for inventory data set out in the 2019 Refinement to the 2006 IPCC Guidelines for National Greenhouse Gas Inventories (2019 Refinement), and subsequent updates.

Data collection

7. Guidance on approaches to data collection for national inventories provided in the 2019 Refinement is relevant to the process of data collection for the EFDB.

8. Responsibilities for catalysing data collection from a range of data suppliers will be shared between the EFDB Editorial Board and the TFI TSU.

9. The engagement of relevant national and international data suppliers should be facilitated through, inter alia, ad hoc EFDB Data Meetings.

Applicability

10. Guidance on applicable data for use in the calculation of EFs described in chapter 2 (Data Collection) 2019 Refinement is relevant for the determination of the applicability of collected data for the EFDB.

11. Data may relate to measurements of relevant variables undertaken at a plant or facility (Section 2.2 and 2.3 of the 2019 Refinement and TFI Technical Bulletin 1 Use of Facility–Specific Data in National Greenhouse Gas Inventories) or at the regional and national level.

12. Data may be the result of continuous or periodic measurements undertaken for commercial or other reasons or for cases where, typically, the costs of measurement are much higher the data may be contained in scientific papers analysing EF variables on a spot or periodic basis.

The case of confidential data

13. Guidance on addressing data suppliers with confidentiality concerns provided in IPCC section 2.2.2 (Restricted data and confidentiality) in the 2019 Refinement is relevant to the operation of the EFDB.

14. The EFDB should be open to accepting depersonalised data that would otherwise be confidential for commercial or legislative reasons.

The case of IPCC default EFs

15. These should be clearly identified (and data updated in the 2019 Refinement should also be highlighted) since the IPCC default EFs represent the set of target variables that the information in the population of EFDB data should be compared with.

The case of large datasets

16. The EFDB should be open to accepting large datasets that may be accompanied by a single set of metadata.

Classification of EFDB data

17. All submitted data must be categorised according to the IPCC classification system of sources and sinks and by category-specific parameters.

18. The main category-specific parameters influencing the emissions and removals are listed in Table 2.1a of the *2019 Refinement*.

Reporting of metadata and ex ante quality control

19. Submitted data or datasets should be documented according to the standards of 2019 Refinement. Data or large datasets should be accompanied by the following metadata:

    - The categorisation of estimates by IPCC classification and method parameter;
    - Source;
    - Description of measurement methods used;
    - Description of calculations and modelling;
    - Information on the representativeness of the data
        - e.g., information on sample sizes across time and space; and
        - information on stratification requirements by key variables.
    - QA/QC activities undertaken; and
    - Reported estimates of the level of uncertainty associated with the data.

20. The final list of metadata variables will be determined in conjunction with the specification process for a renewed EFDB software.

21. NOTE: Desirable qualities of measurement data or datasets are documented in Table 2.1 and in Section 2.2.2 (Generating new data) and Section 2.2.4 (Emission factors and direct measurement of emissions) of the 2019 Refinement. Desirable qualities of facility data or datasets are provided in Tables 2.4 and 2.5 of the 2019 Refinement. Desirable qualities of sampling programs are provided in Annex 2A.2 of the 2019 Refinement.

Ex-poste quality control of the data

22. The TSU will routinely analyse the data in the EFDB to test the population for specific categories for the purpose of the detection of outliers or systemic bias, which may require further investigation as to the accuracy of particular data points or large datasets.

23. The results will be made available to the Editorial Board for their information or consideration and advice on retention. In general, data from peer-reviewed publications maybe considered to fulfil the acceptance criteria, unless a bias or imprecision is identified.

Publication of EFDB analyses

24. The TSU should conduct routine analyses of the data collected in the EFDB in order to test the robustness of existing IPCC default parameters.

25. The results should be considered by the Editorial Board and advice, guidance and analysis provided by the Editorial Board as to the desirability of the development and publication of an IPCC Technical Bulletin or similar, with author attribution, of the resulting analyses.

26. The aim of the analyses would be to communicate information to the public on the robustness of IPCC default parameters and to provide a basis for assessments of the need for future updates of IPCC default parameters.