



# Introduction to IPCC Task Force on National GHG Inventories (TFI)

IPCC Outreach Event

*June 2023*

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# IPCC Structure



**AR6 cycle**  
**(October 2015 – July 2023)**

**IPCC Plenary**

**IPCC Bureau**

**IPCC Executive Committee**

IPCC Secretariat  
(Geneva,  
Switzerland)

Working  
Group I

The Physical  
Science Basis

**TSU**

(France/China)

Working  
Group II

Climate Change  
Impacts,  
Adaptation and  
Vulnerability

**TSU**

(Germany/South Africa)

Working  
Group III

Mitigation  
of  
Climate Change

**TSU**

(UK/India)

Task Force  
on  
National  
Greenhouse  
Gas  
Inventories  
(TFI)

**TSU**

(Japan)

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**ipcc**

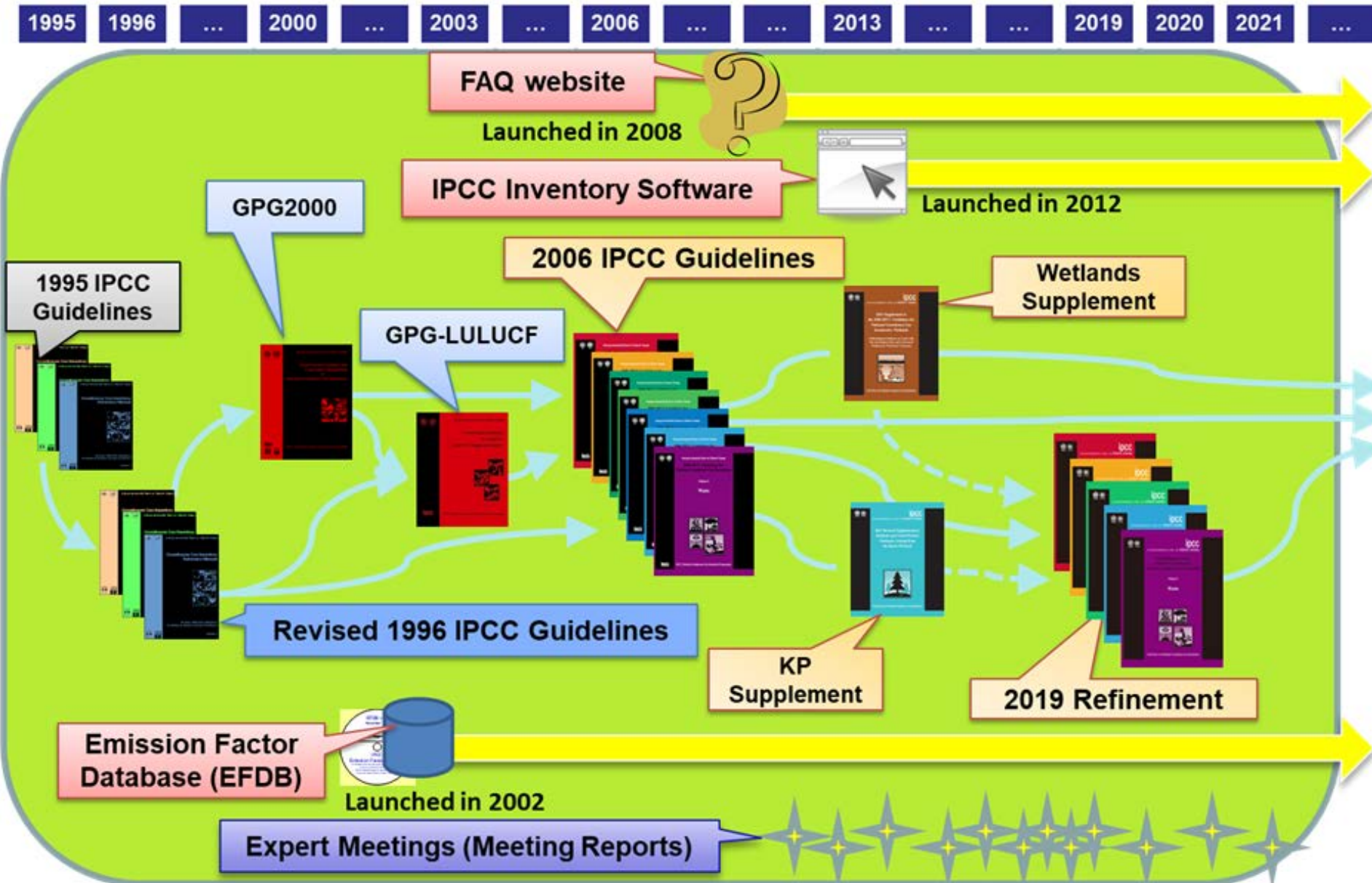
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# IPCC Task Force on National GHG Inventories (TFI)

- The IPCC National Greenhouse Gas Inventories Programme was managed from 1991 by the IPCC WGI in close collaboration with the Organisation for Economic Co-operation and Development (OECD) and the International Energy Agency (IEA) until its transfer to the IPCC Task Force on National Greenhouse Gas Inventories (TFI) which was established in 1998 by the IPCC with Technical Support Unit (TSU) operated in Japan since 1999.
- The objectives of the IPCC TFI are:
  - to develop and refine an internationally-agreed methodology and software for the calculation and reporting of national GHG emissions and removals;
  - to encourage the widespread use of this methodology by countries participating in the IPCC and by signatories of the United Nations Framework Convention on Climate Change (UNFCCC)
- IPCC TFI TSU is based at the Institute for Global Environmental Strategies (IGES) in Japan. It is supported by the Government of Japan. The TSU provides scientific, technical and organizational support to the TFI under the overall supervision of the Task Force Bureau (TFB).

# IPCC TFI Products: Guidelines and supporting tools



# Guidelines



# IPCC Guidelines

- The *2006 IPCC Guidelines for National Greenhouse Gas Inventories* (2006 IPCC Guidelines) provide a technically sound methodological basis for preparing national greenhouse gas inventories.
- The *2013 Supplement to the 2006 IPCC Guidelines for National Greenhouse Gas Inventories: Wetlands* (Wetlands Supplement) extends the content of the 2006 IPCC Guidelines by filling gaps in coverage and providing updated guidance on wetlands systems, included constructed wetlands.
- The *2019 Refinement to the 2006 IPCC Guidelines for National Greenhouse Gas Inventories* (2019 Refinement) updates, supplements and elaborates the 2006 IPCC Guidelines, where the authors identified gaps or out-of-date science. The 2019 Refinement is to be used in conjunction with the 2006 IPCC Guidelines.



<https://www.ipcc-nggip.iges.or.jp/public/2006gl/index.html>

<https://www.ipcc-nggip.iges.or.jp/public/wetlands/index.html>

<https://www.ipcc-nggip.iges.or.jp/public/2019rf/index.html>

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# Use of the IPCC Guidelines

- The UNFCCC reporting guidelines on annual inventories for Annex I Parties require that Annex I Parties shall use the 2006 IPCC Guidelines in preparing their inventories (Decision 24/CP.19).
- Under the Paris Agreement:
  - Each Party shall use the 2006 IPCC Guidelines, and shall use any subsequent version or refinement of the IPCC guidelines agreed upon by the Conference of the Parties serving as the meeting of the Parties to the Paris Agreement (CMA). Each Party is encouraged to use the 2013 Supplement to the 2006 IPCC Guidelines for National Greenhouse Gas Inventories: Wetlands (Decision 18/CMA.1).
  - Parties may use on a voluntary basis the Intergovernmental Panel on Climate Change 2019 Refinement to the 2006 IPCC Guidelines for National Greenhouse Gas Inventories (Decision 5/CMA.3)

# Work on Short-lived Climate Forcers (SLCFs)

- IPCC49 (in Kyoto, Japan, May 2019) decided that TFI should develop a new Methodology Report on SLCFs during AR7 cycle with a preparatory work during AR6 cycle (Decision IPCC-XLIX-7)
- TFI carried out technical analysis of the existing methodological guidance on SLCFs and held three expert meetings to define a complete coverage of SLCFs source categories and species.
  - ✓ Report of the Joint 1<sup>st</sup> & 2<sup>nd</sup> Expert Meeting (October 2021)  
[https://www.ipcc-nggip.iges.or.jp/public/mtdocs/2110\\_SLCF.html](https://www.ipcc-nggip.iges.or.jp/public/mtdocs/2110_SLCF.html)
  - ✓ Report of the 3<sup>rd</sup> Expert Meeting (April 2022)  
[https://www.ipcc-nggip.iges.or.jp/public/mtdocs/2204\\_SLCF\\_EM3.html](https://www.ipcc-nggip.iges.or.jp/public/mtdocs/2204_SLCF_EM3.html)
- The preparatory work (meeting reports and all background information) will inform the scoping process of a new Methodology Report on SLCFs. The Scoping Meeting will be held in AR7 cycle as early as possible (end of 2023 or beginning of 2024)



# IPCC Inventory Software

# IPCC Inventory Software

- The latest version 2.861 was released at SB58 in June 2023.
- The Software implements all methodological tiers and approaches in the 2006 IPCC guidelines and the associated Wetlands Supplement.
- The version 2.861 has a feature for interoperability with the UNFCCC CRT Reporting tool (Energy Sector)

The screenshot shows the IPCC National Greenhouse Gas Inventories website. The header includes the text 'Task Force on National Greenhouse Gas Inventories' and the IPCC logo with 'INTERGOVERNMENTAL PANEL ON climate change'. Logos for WMO and UNEP are also present. A dropdown menu for 'IPCC web sites' is visible. The left sidebar contains a navigation menu with links: Home IPCC, IPCC-TFI Home, Organization, Publications, Emission Factor Database (EFDB), Inventory Software (highlighted), Meetings, FAQs, Links, and Electronic Discussion Group (EDG). The main content area is titled 'Inventory Software' and features a green banner for 'New Version 2.861 – IPCC Inventory Software'. Below this, it states: 'This is the new version 2.861 of the IPCC Inventory Software released on June 6, 2023. Please note that version 2.861 comes in 2 different files for installation. Thus, before downloading the file you shall check which one you actually need by using [this decision tree](#).' Two download links are provided: 'Ver. 2.861 IPCC Inventory Software - 64bit' and 'Ver. 2.861 IPCC Inventory Software - 32bit'. A note says: 'If you find any issues in the use of the IPCC Inventory Software, come back to us at [ipcc-software@iges.or.jp](mailto:ipcc-software@iges.or.jp).' A final message reads: 'Thank you very much for your support.'

<https://www.ipcc-nggip.iges.or.jp/software/index.html>

# IPCC Inventory Software

IPCC Inventory Software - Pavel - [Worksheets]

Application Database Inventory Year Worksheets Reports Tools Export/Import Administrative Window Help

2006 IPCC Categories

- 2.A.3 - Glass Production
- 2.A.4 - Other Process Uses of Carbonates
  - 2.A.4.a - Ceramics
  - 2.A.4.b - Other Uses of Soda Ash
  - 2.A.4.c - Non Metallurgical Magnesia Production
  - 2.A.4.d - Other (please specify)
- 2.A.5 - Other (please specify)
- 2.B - Chemical Industry
  - 2.B.1 - Ammonia Production
  - 2.B.2 - Nitric Acid Production**
    - 2.B.2.a - Adipic Acid Production
    - 2.B.2.b - Caprolactam, Glyoxal and Glyoxylic Acid
    - 2.B.2.c - Carbide Production
    - 2.B.2.d - Titanium Dioxide Production
    - 2.B.2.e - Soda Ash Production
    - 2.B.2.f - Petrochemical and Carbon Black Production
      - 2.B.2.f.a - Methanol
      - 2.B.2.f.b - Ethylene
      - 2.B.2.f.c - Ethylene Dichloride and Vinyl Chloride
      - 2.B.2.f.d - Ethylene Oxide
      - 2.B.2.f.e - Acrylonitrile
      - 2.B.2.f.f - Carbon Black
    - 2.B.2.g - Fluorochemical Production
      - 2.B.2.g.a - By-product emissions
      - 2.B.2.g.b - Fugitive Emissions
    - 2.B.2.h - Other (Please specify)
  - 2.C - Metal Industry
    - 2.C.1 - Iron and Steel Production
    - 2.C.2 - Ferroalloys Production
    - 2.C.3 - Aluminium production
    - 2.C.4 - Magnesium production
    - 2.C.5 - Lead Production
    - 2.C.6 - Zinc Production
    - 2.C.7 - Other (please specify)
    - 2.D - Non-Energy Products from Fuels and Solvents
      - 2.D.1 - Lubricant Use
      - 2.D.2 - Paraffin Wax Use
      - 2.D.3 - Other (please specify)

2006 IPCC Guidelines

Worksheet: Nitric Acid Production - Tier 1 Nitric Acid Production - Tier 2 Capture and storage or other reduction

Sector: Industrial Processes and Product Use  
 Category: Chemical Industry  
 Subcategory: 2.B.2 - Nitric Acid Production  
 Sheet: N2O Emissions from Nitric Acid Production - Tier 2

Data

Equation 3.6

Subdivision	Production process / technology	Nitric acid production from technology i (tonnes)	N2O emission factor for technology type i (kg N2O/tonne nitric acid produced)	Destruction factor for abatement technology type j (Fraction)	Abatement system utilisation factor for abatement technology type j (Fraction)	N2O Emissions (kg)	N2O Emissions (Gg)
Δ	I, J	NAPI	EFi	DFj	ASUFj	E=NAPI*EFi*(1-DFj)*ASUFj	E/1000000
Facility #2	Medium pressure combustion plants	1,250	7	0.99	0.9	953.75	0.00095
Kanagawa	High pressure plants	10,000	9	0.5	1	45,000	0.045
	Plants with NSCRa (all processes)	1,000	2	0.5	1	1,000	0.001
Tokyo	Combined technology	5,000	2	0.5	1	5,000	0.005
	Plants with NSCRa (all processes)	1,000	2	0.6	1	800	0.0008
Total		18,250				52,753.75	0.05275

Uncertainties Time Series data entry...

Worksheet notes

User notes

2.B.2 - Time Series

NITROUS OXIDE (N2O) Emissions (Gg CO2 Equivalents)

\* Base year for assessment of uncertainty in trend: 1990

Gas: NITROUS OXIDE (N2O)

Country/Territory: Country X Inventory Year: 1990 Base year for assessment of uncertainty in trend: 1990 CO2 Equivalents: AR4 GWPs (100 year time horizon) Database file: (C:\Users\shermanau\Desktop\pavel\SOFT\IPPU SPEC\7 TESTING 282\Database\_backup\_282\_IPPU\_September.acbdb)

<https://www.ipcc-nggip.iges.or.jp/software/index.html>

# EFDB

# EFDB

- Launched in 2002
- Open library of emission factors (EFs) and other parameters with background information: <https://www.ipcc-nggip.iges.or.jp/EFDB/main.php>
  - Default data from IPCC guidelines
  - Data from peer-reviewed scientific papers
  - Data from other publications (e.g., national reports)
- EFDB is recognized by Parties to the UNFCCC as a useful resource for inventory compilers (e.g., FCCC/SBI/2011/5/Rev.1 and Decision 24/CP.19)
- The responsibility of an appropriate use of EFDB data always will remain with the users.
- Open to any data proposals: [ipcc-efdb@iges.or.jp](mailto:ipcc-efdb@iges.or.jp)

# EFDB

EFDB  
emission factor database



IPCC web sites ▼

Home

Basic search

Fulltext search

Search by ID

Documents

Off-line version of EFDB

Help

## Main Page

### Welcome to EFDB!

**Nature of EFDB:** Supporting material prepared for consideration by the Intergovernmental Panel on Climate Change. **This supporting material has not been subject to formal IPCC review processes.** EFDB is meant to be a recognised library, where users can find emission factors and other parameters with background documentation or technical references that can be used for estimating greenhouse gas emissions and removals. **The responsibility of using this information appropriately will always remain with the users themselves. The database users are highly encouraged to consult the background technical reference associated with the entry to better evaluate the application of the data to their own situation.**

**Request for data input:** Users are encouraged to provide the EFDB with any relevant proposals on emission factors or other related parameters. If you wish to submit your data, please contact the [Technical Support Unit](#).

The data proposal should include the following documents:

- 1). Filled in [EFDB data entry form](#).
- 2). A copy of data sources (e.g., peer-reviewed journal papers).

Acceptance of such proposals will be subject to evaluation by the [EFDB Editorial Board](#) using well-defined [criteria](#).

**Terminology:** EFDB is a database on various parameters to be used in calculation of anthropogenic emissions by sources and removals by sinks of greenhouse gases. It covers not only the so-called "emission factors" but also the other relevant parameters. For convenience sake, however, the term "Emission Factor" or its abbreviation "EF" is sometimes used to represent parameters in this database generally.

**Software requirements:** It is highly recommended to use Microsoft Internet Explorer version 5.0 or higher for best performance. Alternatively Netscape Navigator version 6.0 or higher can be used. It is also recommended to have Microsoft Office 97 or higher for generating Word and Excel outputs.

EFDB at present contains the IPCC default data (Revised 1996 IPCC Guidelines, IPCC Good Practice Guidance and Uncertainty Management in National Greenhouse Gas Inventories, IPCC Good Practice Guidance for Land Use, Land-Use Change and Forestry, 2006 IPCC Guidelines for National Greenhouse Gas Inventories and 2013 Supplement to the 2006 IPCC Guidelines for National Greenhouse Gas Inventories: Wetlands), and data from peer-reviewed journals and other publications including National Inventory Reports (NIRs). The old [CORINAIR](#) data have been removed as it is outdated.

Possible useful information (activity data, emission factors and parameters) for estimation of GHG emissions/removals can also be found in [other databases](#). The use of the other databases is the responsibility of the users.

In principle, data that do not fully meet the acceptance criteria cannot be included into EFDB. However, there are other data that do not meet the criteria but considered useful to inventory compilers, such as those derived from best available information using expert judgement, etc. To support inventory compilers in case no other information is available, an [extra page](#) has been prepared to provide EFDB users with access to such data selected by the EFDB Editorial Board. The EFDB users must carefully read the introductory note to each set of data in this page and take it into consideration when using those data.

Frequently asked questions and answers can be found under [Help menu](#) item.

## What's new

<https://www.ipcc-nggip.iges.or.jp/EFDB/main.php>



# Expert Meetings

# Expert Meetings

- Expert Meetings are held by TFI to discuss specific topics relating to inventory methodology in accordance with agreement by IPCC on their usefulness or necessity.  
<https://www.ipcc-nggip.iges.or.jp/meeting/meeting.html>
- Examples are, in addition to the annual ones relevant to EFDB and IPCC Inventory Software:
  - ✓ Expert Meeting on Use of Atmospheric Observation Data in Emission Inventories, 5-9 September 2022, Geneva, Switzerland  
[https://www.ipcc-nggip.iges.or.jp/public/mtdocs/2209\\_AtmosObs.html](https://www.ipcc-nggip.iges.or.jp/public/mtdocs/2209_AtmosObs.html)
  - ✓ Expert Meeting on Short-Lived Climate Forcers, 28-31 May 2018, Geneva, Switzerland [https://www.ipcc-nggip.iges.or.jp/public/mtdocs/1805\\_Geneva.html](https://www.ipcc-nggip.iges.or.jp/public/mtdocs/1805_Geneva.html)



Expert Meeting on  
Use of Atmospheric  
Observation Data in  
Emission Inventories

# FAQ Web-site

# FAQ Website

- Answers to frequently asked questions (FAQs) such as:

Q1-4-1. Can the methods and default data of the IPCC Guidelines for National Greenhouse Gas Inventories be used in estimation of emissions/removals at scales other than national?

Q2-4. Where can we find GHG emission factors for electricity generation?

Q2-10. According to the IPCC Guidelines CO<sub>2</sub> Emissions from the combustion of biomass are reported as zero in the Energy sector. Do the IPCC Guidelines consider biomass used for energy to be carbon neutral?

<https://www.ipcc-nggip.iges.or.jp/faq/faq.html>

Task Force on  
National Greenhouse Gas Inventories

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WMO UNEP

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Electronic Discussion Group (EDG)



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FAQs

Frequently Asked Questions

[printable version](#)

**1. IPCC Task Force on National Greenhouse Gas Inventories (TFI), general guidance and other inventory issues**

**1.1. Questions about IPCC National Greenhouse Gas Inventories Programme**

**Q1-1-1. What is the role of the IPCC in Greenhouse Gas Inventories and reporting to the UNFCCC?**

A: The IPCC has generated a number of methodology reports on national greenhouse gas inventories with a view to providing internationally acceptable inventory methodologies. These methodology reports are available on the following website <http://www.ipcc-nggip.iges.or.jp/public/>. The IPCC accepts the responsibility to provide scientific and technical advice on specific questions related to those inventory methods and practices that are contained in these reports, or at the request of the UNFCCC in accordance with established IPCC procedures. The IPCC has set up the Task Force on National Greenhouse Gas Inventories (TFI) to run the National Greenhouse Gas Inventory Programme (NGGIP) to produce this methodological advice. Parties to the UNFCCC have agreed to use the *IPCC Guidelines* in reporting to the Convention. Annex I Parties shall use the 2006 IPCC Guidelines for National Greenhouse Gas Inventories (2006 *IPCC Guidelines*) and are encouraged to use the 2013 Supplement to the 2006 IPCC Guidelines for National Greenhouse Gas Inventories: Wetlands (*Wetlands Supplement*).

For the purpose of providing information on anthropogenic greenhouse gas emissions and removals from LULUCF activities under Article 3, paragraphs 3 and 4 of the Kyoto Protocol, Annex I Parties shall apply, as appropriate, the 2013 Revised Supplementary Methods and Good Practice Guidance Arising from the Kyoto Protocol (*KP Supplement*). The *Wetlands Supplement* shall apply for providing information on wetland drainage and rewetting elected activity under Article 3.4 of the Kyoto Protocol and is encouraged but not mandatory for any other activities under Article 3.3 and 3.4 of the Kyoto Protocol.

Non-Annex I Parties should use the Revised 1996 IPCC Guidelines for National Greenhouse Gas Inventories (*Revised 1996 IPCC Guidelines*), Good Practice Guidance and Uncertainty Management in National Greenhouse Gas Inventories (*GPG2000*), and the Good Practice Guidance for Land Use, Land-Use Change and Forestry (*GPG-LULUCF*). Some non-Annex I Parties have started using also the 2006 IPCC Guidelines in their reporting to the UNFCCC.

In addition, Paris Agreement (Article 13 paragraph 7(a)) states that Each Party shall regularly provide a national inventory report of anthropogenic emissions by sources and removals by sinks of greenhouse gases, prepared using good practice methodologies accepted by the IPCC and agreed upon by the Conference of the Parties serving as the meeting of the Parties to this Agreement.

**Q1-1-2. How does the IPCC produce its Inventory Guidelines?**

**Q1-1-3. What are the required steps to be taken to have an inventory methodology accepted by the IPCC?**

**Q1-1-4. How can new data and information be taken up by the IPCC NGGIP?**



# Thank you

<https://www.ipcc-nggip.iges.or.jp/index.html>

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