



# IPCC Emission Factor Database (EFDB)

UN Climate Change Conference  
Dubai, United Arab Emirates  
9 December 2023

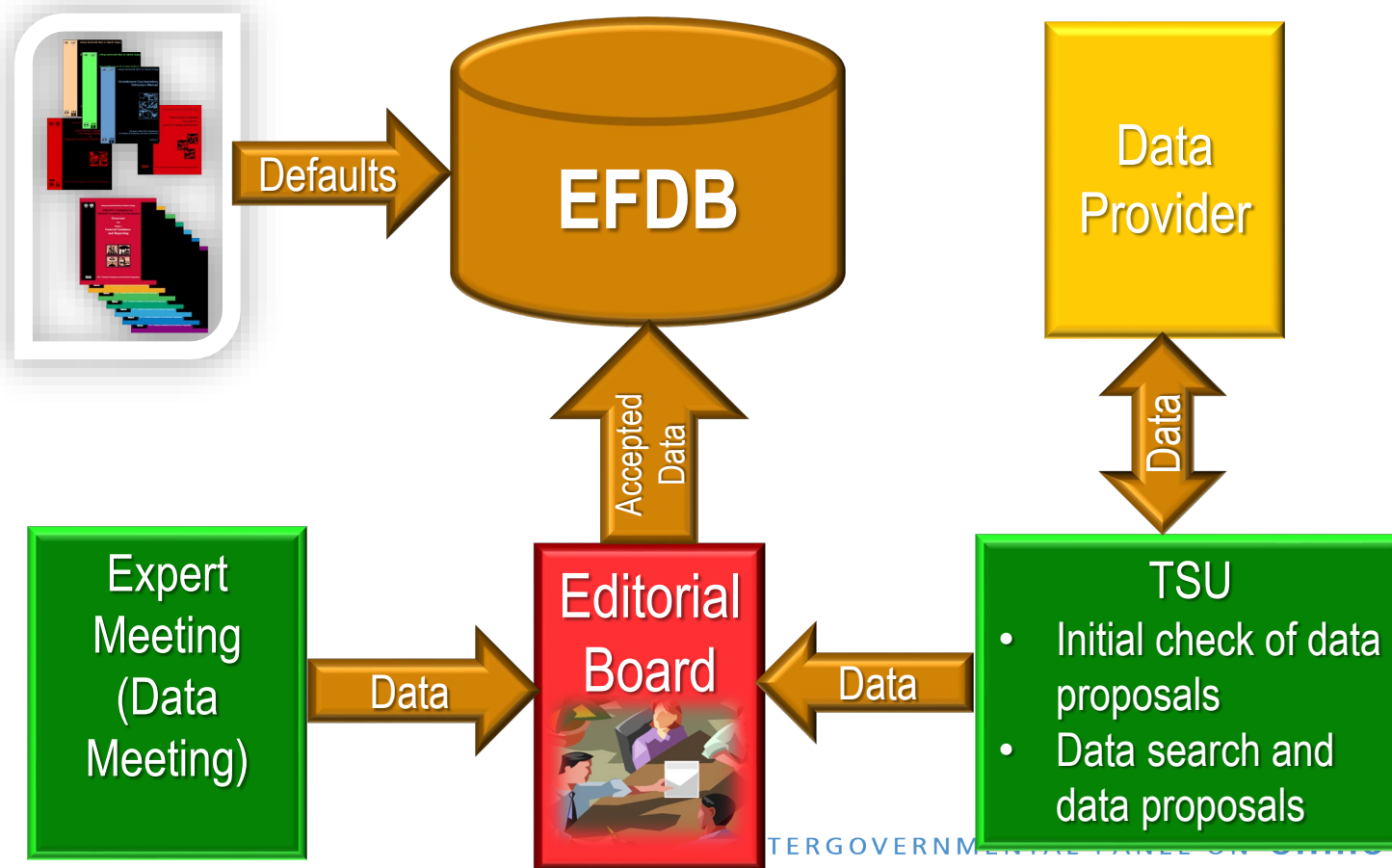
IPCC TFI TSU

# Background

- 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)
- Communication platform to share data and information that can be used for estimation of national greenhouse gas (GHG) emissions/removals
- Recognized as a useful resource for inventory compilers (e.g., Decision 24/CP.19 UNFCCC reporting guidelines on annual inventories for Parties included in Annex I to the Convention)

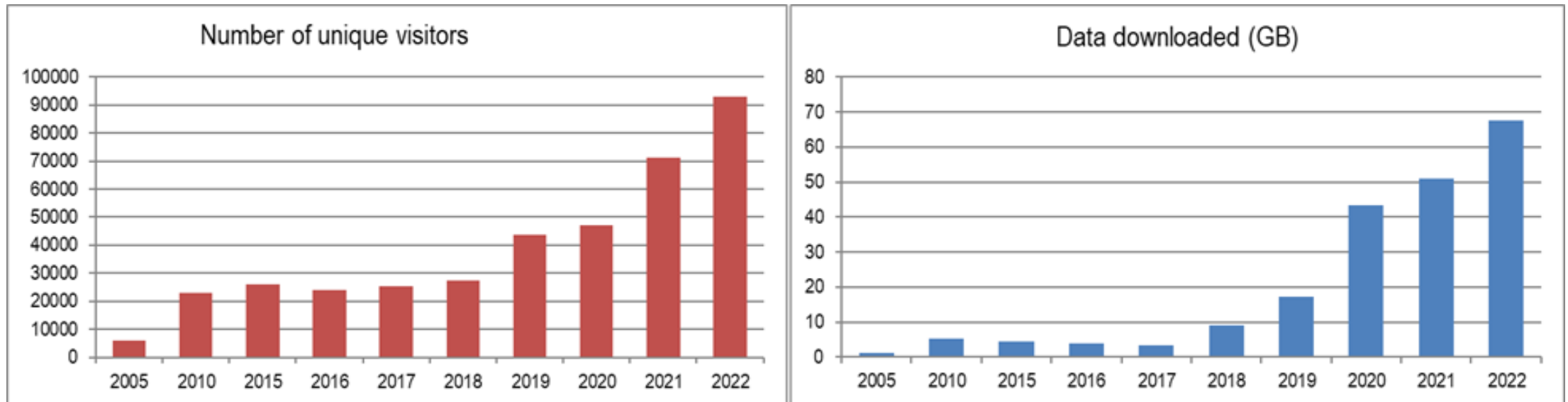
# EFDB

- Regularly updated with new data
- **Open to any data proposals** [ipcc-efdb@iges.or.jp](mailto:ipcc-efdb@iges.or.jp)
  - Data proposals are considered by Editorial Board for inclusion into the EFDB
  - Criteria for inclusion of new data: robustness, applicability and documentation



# EFDB usage

- The number of unique visitors and amount of data downloaded have been increasing
  - A “unique visitor” is a user who has made at least 1 hit on 1 page of the website during a month. If the user makes several visits during the month, it is counted only once.



# EFDB search

EFDB emission factor database

ipcc INTERGOVERNMENTAL PANEL ON climate change WMO UNEP

Home **Basic search** Fulltext search Search by ID Statistics Documents Help

Basic search

Select Gases | Select C pools | IPCC Default Data | Other (non-default) Data | Regions | Countries

IPCC Guidelines: 2006

IPCC 2006 Categories

- 1 - Energy
- 2 - Industrial Processes and Product Use
- 3 - Agriculture, Forestry, and Other Land Use
- 4 - Waste
- 5 - Other

Status

- IPCC 2006 Source/Sink Category: 3 - Agriculture, Forestry, and Other Land Use
- Gases: (All)
- C pools: (All + NA)
- Type of parameter: (All)
- Regions: (All + NA)
- Countries: (All + NA)

Displayed records: 1 - 20 / 9993. Export to XLS

Filter			Select Gases	Select C pools					(All)	Apply filter
Active Filters										
EF ID	IPCC 1996	IPCC 2006	Gas	C pool	Type of parameter	Description	Parameters / Conditions	Value	Unit	Action
43088	4A2 - Buffalo	3.A.1.b - Buffalo	METHANE		1996 IPCC default	Enteric Fermentation Emission Factor		55	kg/head/yr	<a href="#">Detail</a>
43089	4A2 - Buffalo	3.A.1.b - Buffalo	METHANE		1996 IPCC default	Enteric Fermentation Emission Factor		55	kg/head/yr	<a href="#">Detail</a>
43090	4A3 - Sheep	3.A.1.c - Sheep	METHANE		1996 IPCC default	Enteric Fermentation Emission Factor		8	kg/head/yr	<a href="#">Detail</a>

Search options (e.g., Basic search)

Search criteria e.g., specify gas, type of parameters

Status of search

To narrow down search results

Details of data

Results can be exported in Excel file

# EFDB data output

A	B	C	D	E	F	G	H																																														
EF ID	IPCC 1996 Source/Sink Category	IPCC 2006 Source/Sink Category	Gas	Type of	Description	Technologies / Practices	Parameters / Conditions																																														
415943	4A - Enteric Fermentation	3.A.1 - Enteric Fermentation	METHANE	2006 IPCC default	Tier 1 enteric fermentation emission factors for Cattle	Commercialised dairy sector based on grazing. Separate beef cow herd grazing pastures and rangelands. Minor amount of feedlot feeding with grains. Growing non-dairy cattle comprise a large portion of the population.	Animal category: Cattle (Dairy)																																														
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# Enhancement and improvement of EFDB

- New upgraded version is released in September 2023
  - 2019 Refinement categories
  - Enhanced search/filter functions (e.g., new search criteria)
  - Data statistics

The screenshot displays the EFDB (Emission Factor Database) interface. At the top, the header includes the EFDB logo, the IPCC logo, and the text "INTERGOVERNMENTAL PANEL ON climate change". Below the header is a navigation menu with options: Home, Basic search, Fulltext search, Search by ID, Statistics, Documents, Off-line version of EFDB, and Help. The main content area is titled "Basic search" and features several filter tabs: "Select Gases", "Select Fuels", "Select C pools", "IPCC Default Data", "Other (non-default) Data", "Regions", and "Countries". The "Select C pools" tab is active, showing a list of categories with checkboxes: Above-ground biomass (AGB), Below-ground biomass (BGB), Litter (L), Dead wood (DW), Soil organic matter - mineral soils (SOM mineral), Soil organic matter - organic soils (SOM organic), Harvested wood products (HWP), and Classified otherwise. The "Regions" tab is also active, showing a list of regions with checkboxes: Asia, Africa, Latin America and Caribbean, North America, Oceania, and Europe. The "Countries" tab is active, showing a list of countries with checkboxes: Afghanistan, Armenia, Azerbaijan, Bahrain, Bangladesh, Bhutan, Brunei Darussalam, Cambodia, China, China, Hong Kong Special Administrative Region, China, Macao Special Administrative Region, Christmas Island, Democratic People's Republic of Korea, Georgia, India, Indonesia, Iran, Iraq, and Israel. At the bottom of the interface, there is a summary of the selected filters: Fuels: (All + NA), C pools: (All + NA), Type of parameter: 2019 Refinement default, Regions: (All + NA), and Countries: (All + NA). The UNEP logo is visible in the bottom right corner.

# Enhancement and improvement of EFDB

EFDB emission factor database

ipcc INTERGOVERNMENTAL PANEL ON climate change WMO UNEP

IPCC web sites

Home Basic search Fulltext search Search by ID **Statistics** Documents Off-line version of EFDB Help

## Basic search

Select Gases | IPCC Default Data | Other (non-default) Data | Regions | Countries

Choose table columns | Hide IPCC Category tree | Hide status

IPCC Guidelines

IPCC 2006 Categories

- 1 - Energy
- 2 - Industrial processes
- 3 - Agriculture, Forestry and Other Land Use
- 4 - Waste
- 5 - Other

Status

IPCC 2006 Sectors

- Gases: (All)
- Type of parameter: (All)
- Regions: (All)
- Countries: (All)

Table 1

Sector	Total number of data	Source of data							Default	Other
		IPCC Guidelines	Peer-reviewed journal	National Inventory Report (Annex I)	National Communications	Biennial Update Report	Other			
Energy	6303	5545	134	230	19	0	425	87%	13%	
IPPU	1012	624	80	94	0	0	214	62%	38%	
AFOLU	8857	6402	1969	59	0	0	427	72%	28%	
Waste	2077	787	746	229	9	0	306	38%	62%	
Total	18299	13358	2629	612	28	0	1372	73%	27%	

## Displayed results

Table 2

Please note, that one Emission Factor or Other Parameter that has multiple IPCC Source/Sink Categories assigned, will be accounted for in all of those categories. This will result in totals being higher than in Table 1.

Sector	Category	Total number of data	Source of data						
			IPCC Guidelines	Peer-reviewed journal	National Inventory Report (Annex I)	National Communications	Biennial Update Report	Other	
1 - Energy	1 - Energy	16	0	0	0	0	0	0	16
	1.A - Fuel Combustion Activities	1323	1102	35	79	6	0	101	
	1.A.1 - Energy Industries	473	263	28	80	1	0	101	
	1.A.2 - Manufacturing Industries and Construction	445	247	0	80	0	0	118	
	1.A.3 - Transport	2741	2599	26	28	4	0	84	
1.A.4 - Other Sectors	1.A.4 - Other Sectors	884	842	4	3	0	0	35	
	1.A.5 - Non Specified	1	0	0	0	0	0	1	
	1.B - Fugitive emissions from fuels	0	0	0	0	0	0	0	
1.B.1 - Solid Fuels	1.B.1 - Solid Fuels	182	148	11	0	8	0	15	
	1.B.2 - Oil and Natural Gas	375	344	30	0	0	0	1	
	1.B.3 - Other emissions from Energy Production	3	0	0	3	0	0	0	

4.C - Incineration and Waste Treatment

4.A - Waste Disposal

4.B - Biological Treatment of Solid Waste

4.C -

METHANE

CARBON DIOXIDE

NITROUS OXIDE

2006 IPCC default

MSW Generation Rate

Wet waste

Eastern Asia

0.37

tonnes/cap/yr

Table 2.1, p.2.5 in 2006 IPCC Guidelines

(All) Apply filter

Value	Unit	Source of data	Action
(All)	%	(All)	Detail
		IPCC Guidelines	
		Peer-reviewed journal	
		National Inventory Report (Annex I)	
		National Communications	
		Biennial update report	
		Other	
			Detail



# EFDB meetings

- Annual meeting of the Editorial Board to consider data proposals and discuss how to improve/enhance the EFDB
  - 21<sup>st</sup> Meeting of Editorial Board (EB21), 16-19 May 2023, Christchurch, New Zealand
  - Summary of the meetings are published at IPCC TFI website <https://www.ipcc-nggip.iges.or.jp/meeting/meeting.html>
- Expert Meetings on Data for the EFDB (Data Meetings) have been organized annually since 2008
  - Attended by data providers (e.g., inventory experts, researchers) and Editorial Board members
  - 21<sup>st</sup> Data Meeting (DM21), 17-18 May 2023, Christchurch, New Zealand
- Total 2,445 data were accepted by the Editorial Board at the EB21 and DM21 for inclusion into the EFDB

# Criteria for inclusion of new data

- **Robustness**

- Within the accepted uncertainty, the value is unlikely to change if there was repetition of the original measurement programme or modelling activity.

The term “accepted uncertainty” refers to the uncertainty of IPCC defaults for that category.

- **Applicability**

- An emission factor can only be applicable if the source and its mix of technology, operating and environmental conditions and abatement and control technologies under which the emission factor was measured or modeled are clear and allow the user to determine how it can be applied.

- **Documentation**

- Access information to the original technical reference must be provided to evaluate the robustness and applicability as described above.

# Thank you

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

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