



Task Force on National Greenhouse Gas Inventories

Introduction to the IPCC and its Task Force on National Greenhouse Gas Inventories (TFI)

Latin American Workshop on National GHG Inventories Systems

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Contents

- The Intergovernmental Panel on Climate Change (IPCC)
 - ❖ Background and how it works
- The Task Force on National Greenhouse Gas Inventories (TFI)
 - ❖ Development of inventory guidelines and other activities



Task Force on National Greenhouse Gas Inventories

Intergovernmental Panel on Climate Change

IPCC



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The IPCC

- The IPCC is an intergovernmental body that:
 - ❖ provides scientific, technical and socio-economic advice
 - ❖ to the world community, and in particular to the 170-plus Parties to the United Nations Framework Convention on Climate Change (UNFCCC).
 - ❖ It is open to all Members of UNEP and of WMO.

IPCC

- Established by WMO (World Meteorological Organization) and UNEP (United Nations Environment Programme) in 1988 to;
 - ❖ Make periodic assessments of the science, impacts and the socio-economic aspects of climate change and of adaptation and mitigation options to address it;
 - ❖ Assess, and develop as necessary, methodologies such as the IPCC Guidelines for National Greenhouse Gas Inventories;
 - ❖ Provide, on request, scientific/technical /socio-economic advice to the Conference of the Parties to the United Nations Framework Convention on Climate Change (UNFCCC) and its bodies.

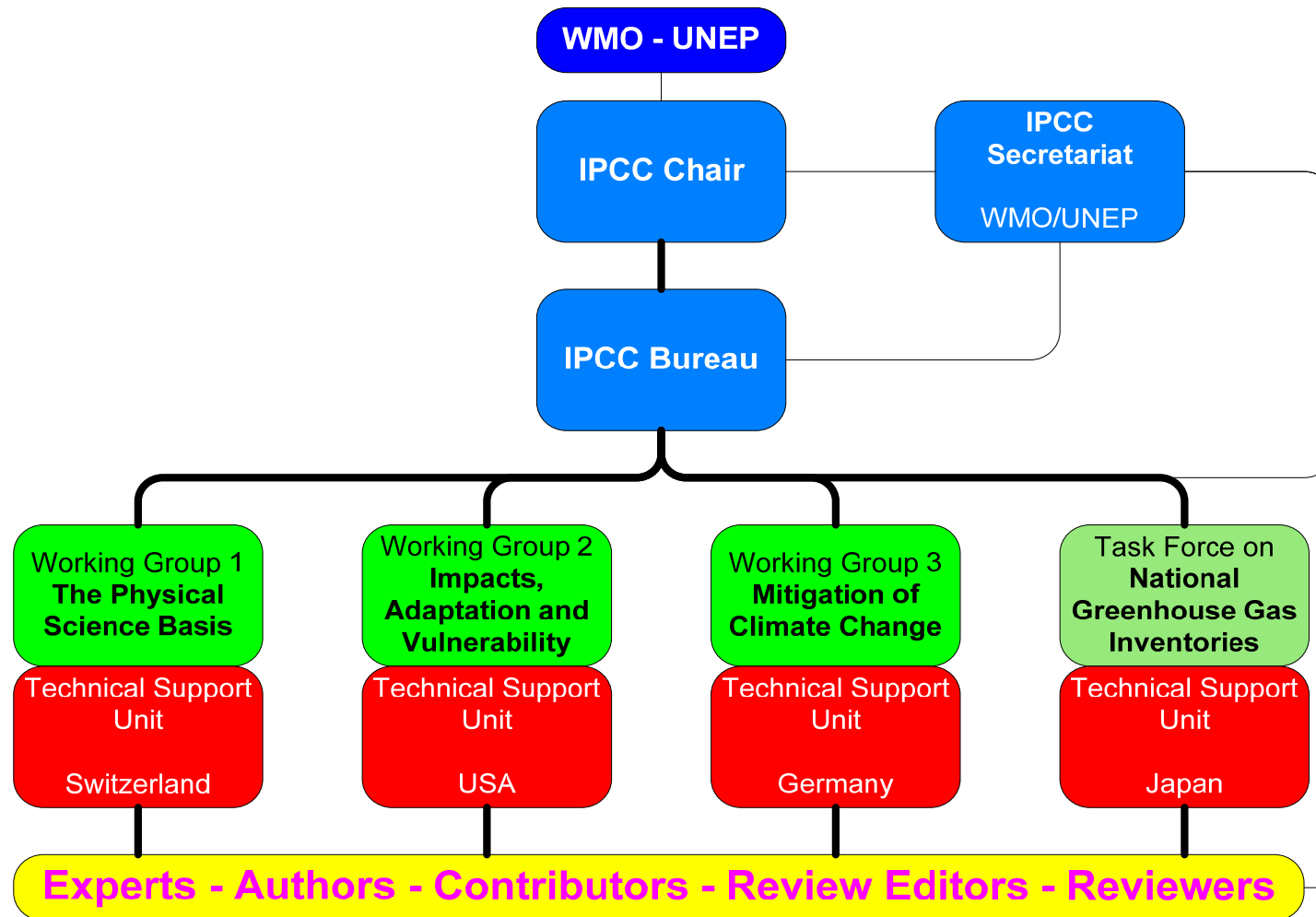
Why?

- Human induced climate change is starting to occur.
- The climate system is so vast and complex that much uncertainty remains.
- Climate change poses a serious challenge to policymakers.
- Policymakers cannot rely on popular interpretations of the evidence or on the views of an individual expert.
- They need an objective summary of all the available research.

What

- The Panel does not conduct new research or monitor climate-related data.
- Its mandate is to assess, on a comprehensive, objective, open and transparent basis, the scientific, technical and socio-economic information on climate change that is available around the world in peer-reviewed literature, journals, books and, where appropriately documented, in industry literature and traditional practices.
- IPCC reports need to ensure a balanced reporting of viewpoints and be policy relevant but not policy-prescriptive or policy-driven.

IPCC – Organisation



TFI-TSU established in Japan

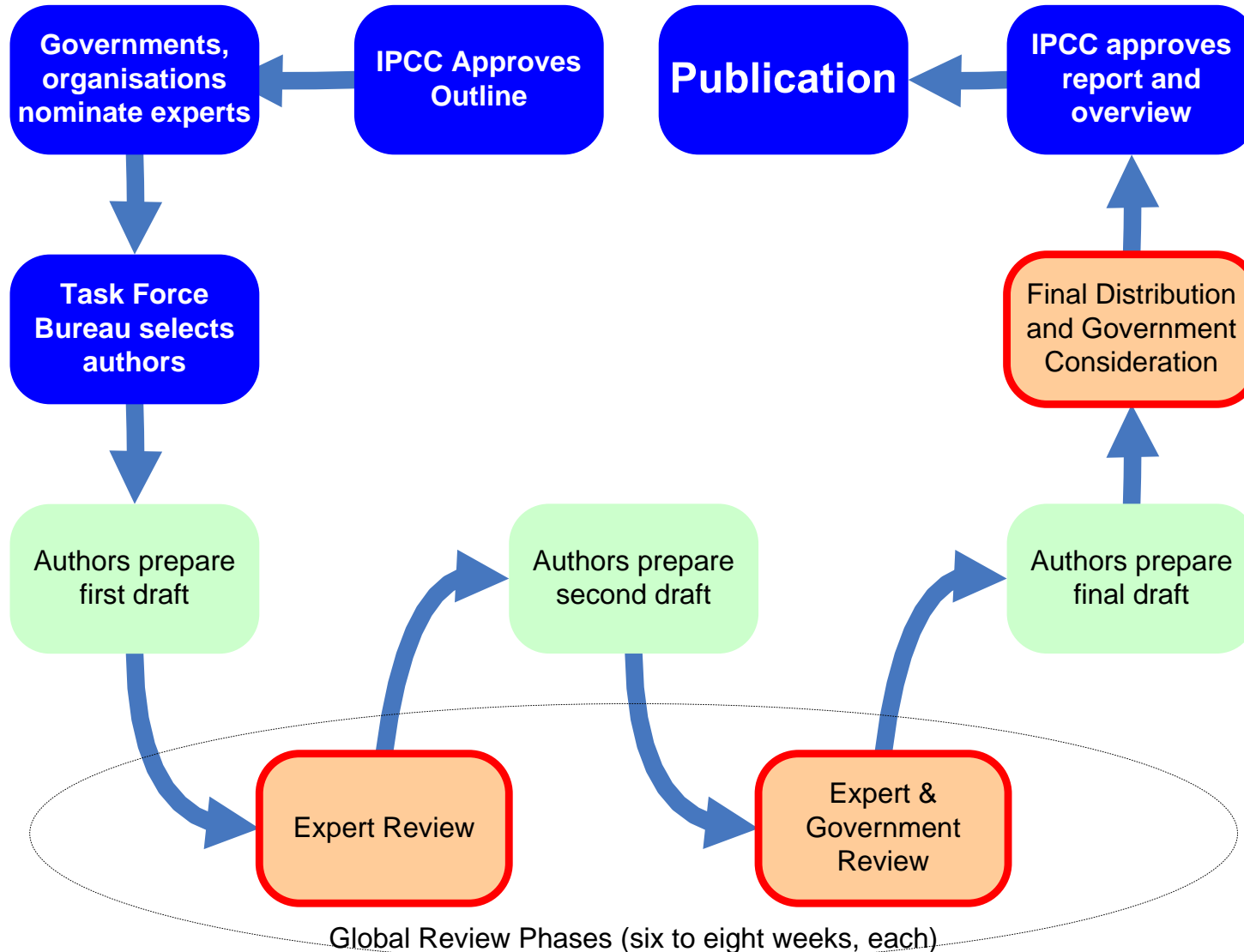


Technical Support Units for WGs/TF (TSUs) in 2011

IPCC - Review

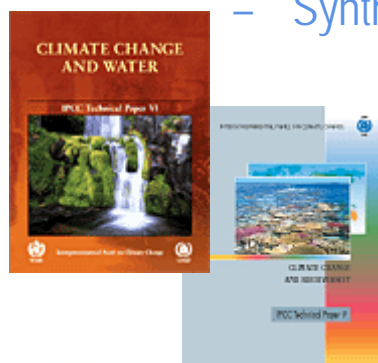
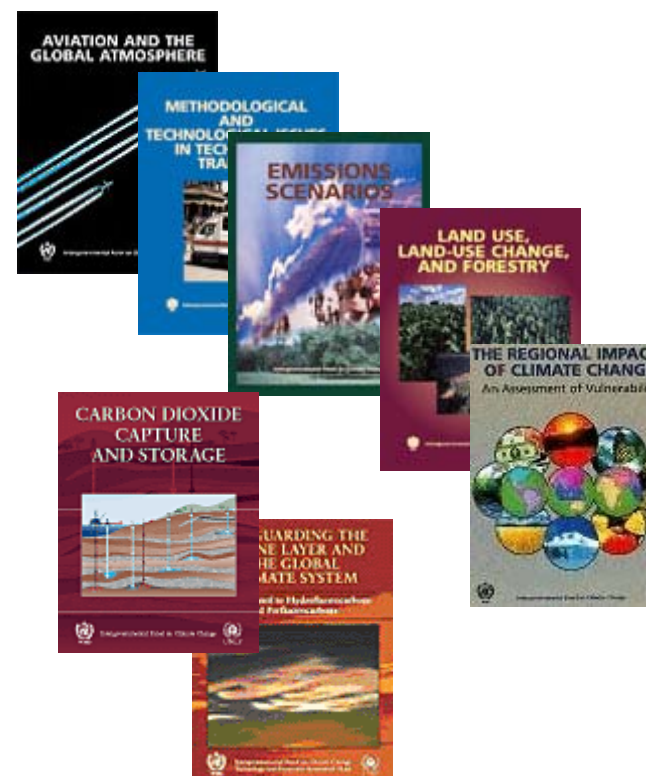
- Review process is fundamental to the quality and influence of the reports
- Authors have a wide range scientific, technical and socio-economic skills as well as a wide geographical representation
- Extensive review process involving many experts and governments leads to wide range of views represented in reports

IPCC Review



Non-TFI Products

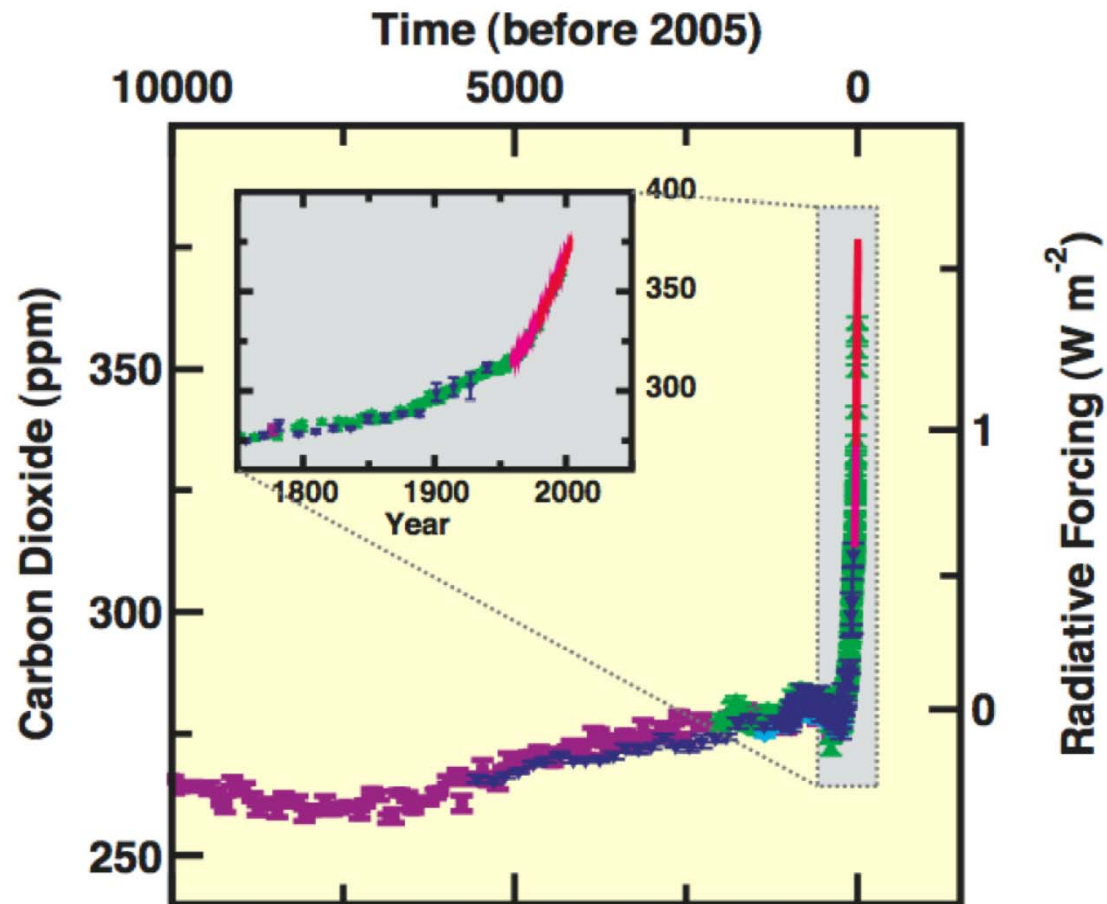
- Special Reports
 - Aviation
 - Carbon Capture and Storage
- Technical Papers
 - Water
- IPCC Fourth Assessment Report
 - WGI – The Physical Science Basis
 - WGII – Impacts, Adaptation & Vulnerability
 - WGIII – Mitigation of Climate Change
 - Synthesis Report



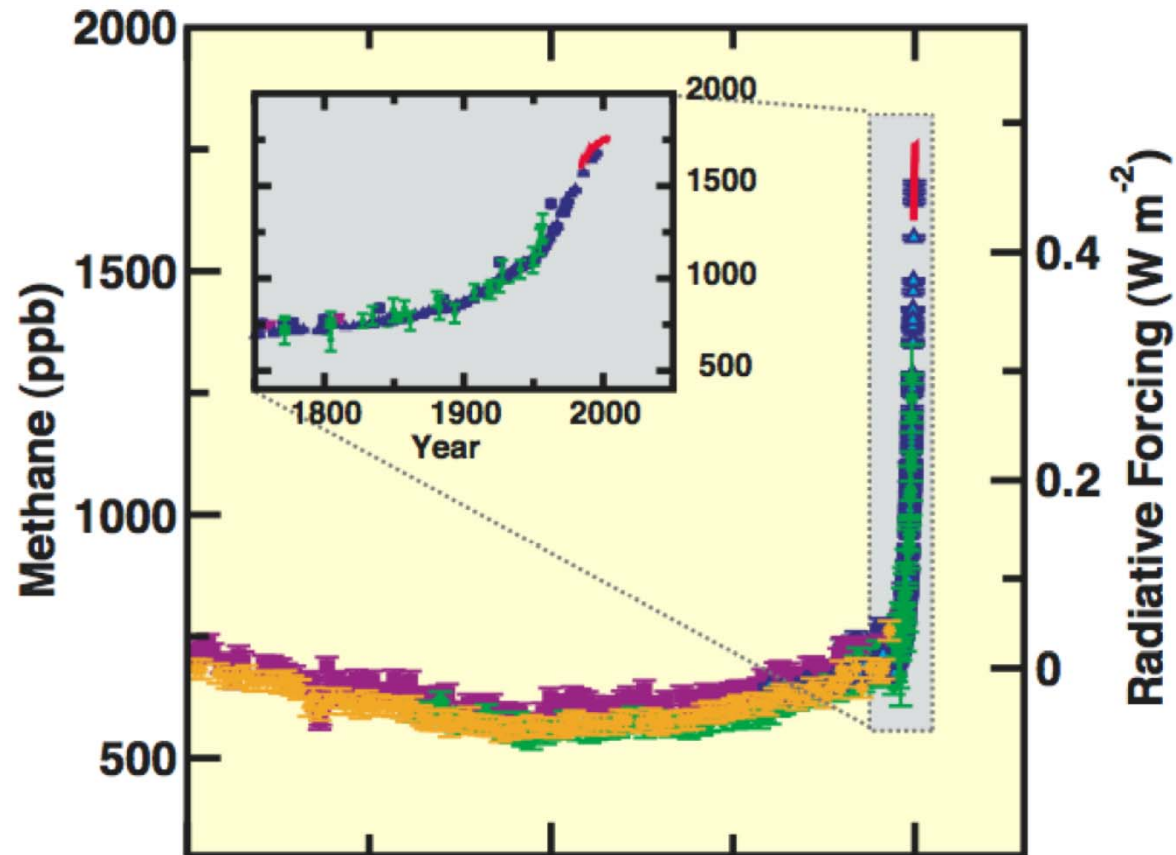
AR4 - Concentrations

- Global atmospheric concentrations of carbon dioxide, methane and nitrous oxide have increased markedly as a result of human activities since 1750 and now far exceed pre-industrial values determined from ice cores spanning many thousands of years.
- The global increases in **carbon dioxide** concentration are due primarily to **fossil fuel use and land-use change**, while those of **methane and nitrous oxide** are primarily due to agriculture.

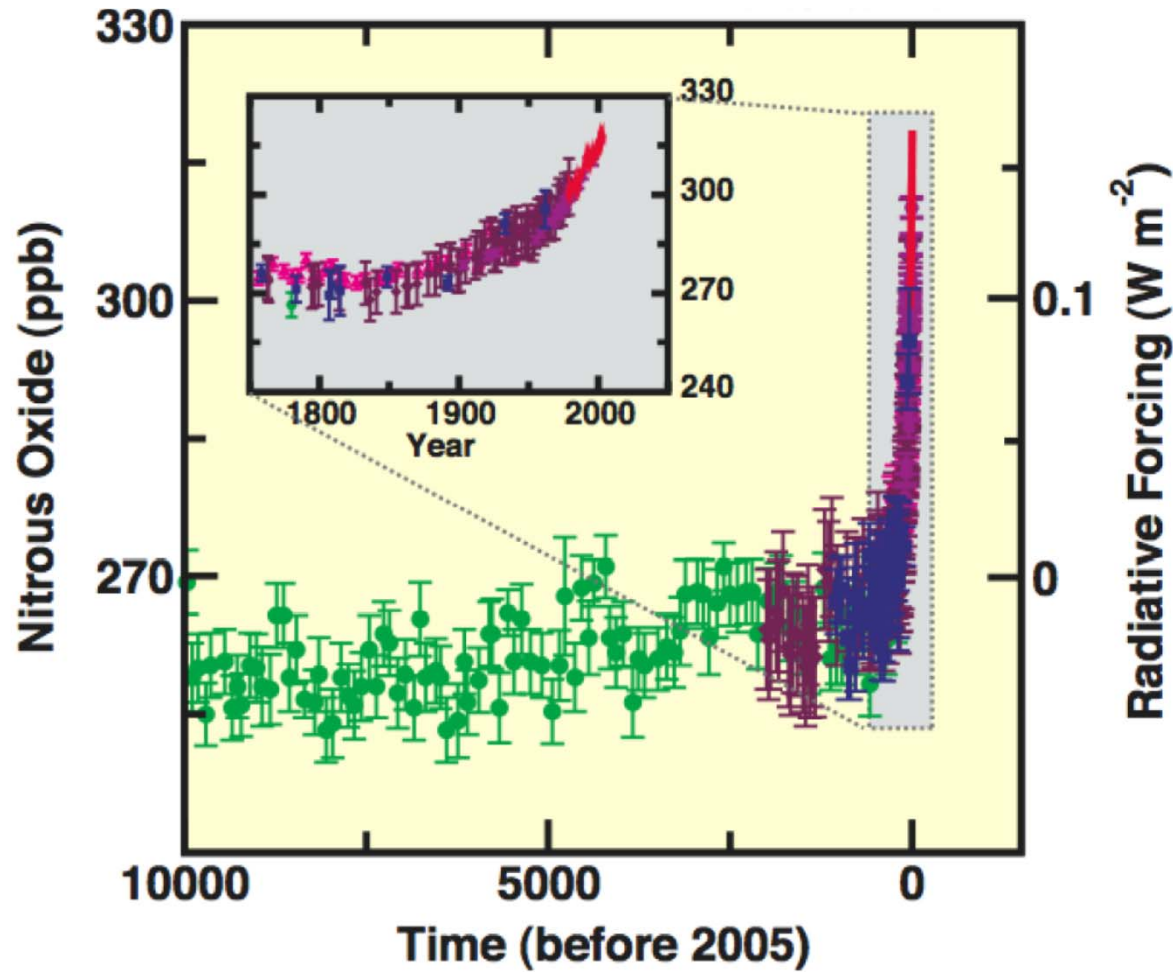
AR4 - Concentrations



AR4 - Concentrations

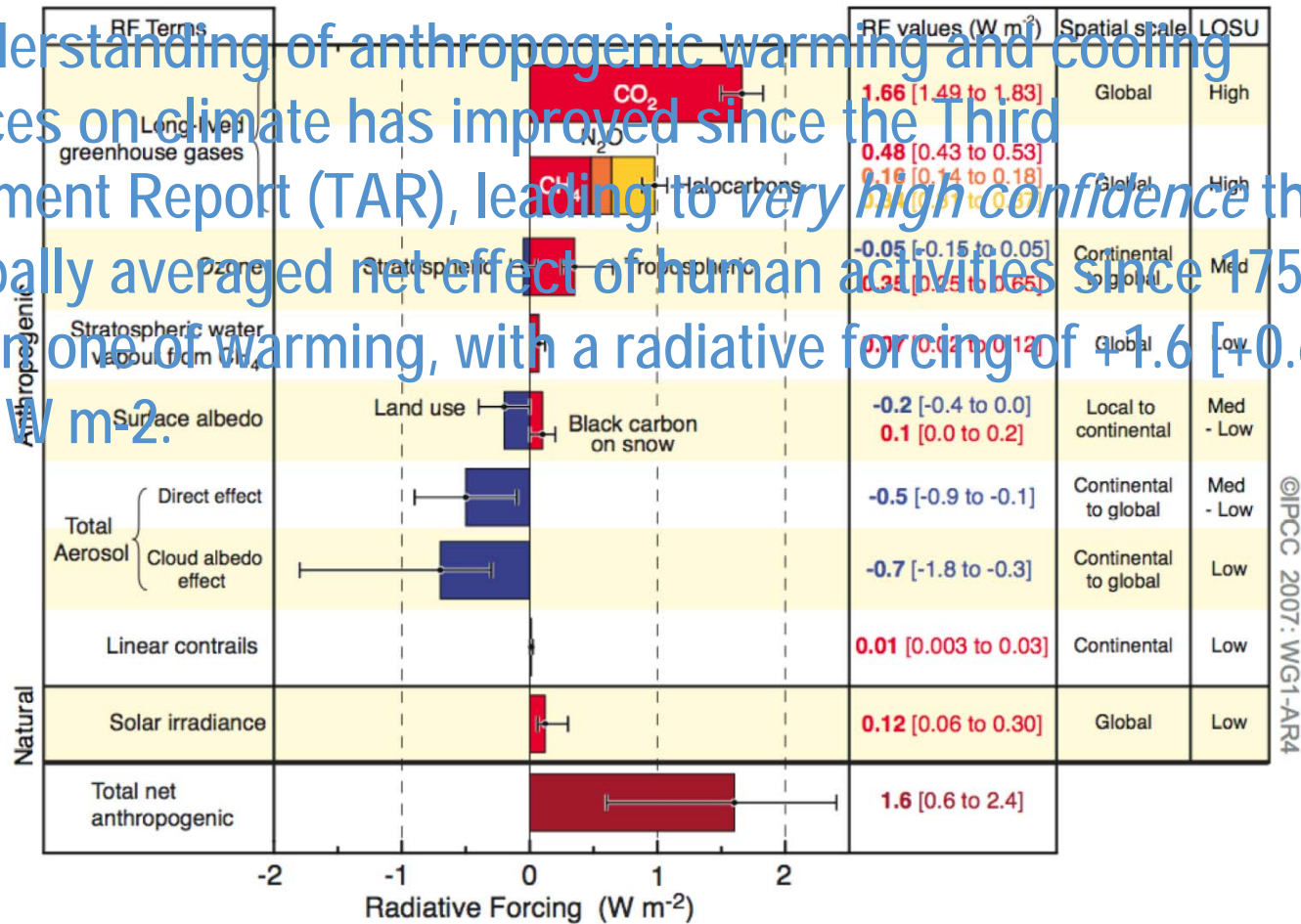


AR4 - Concentrations

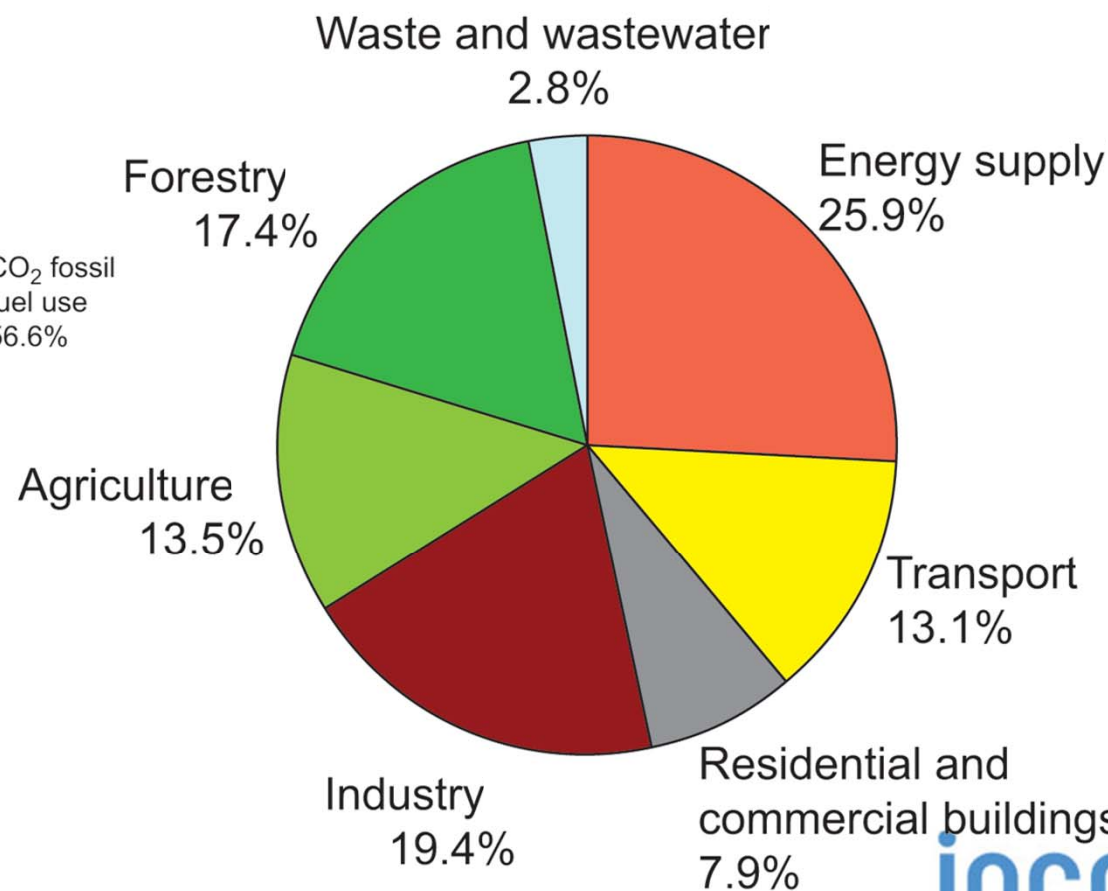
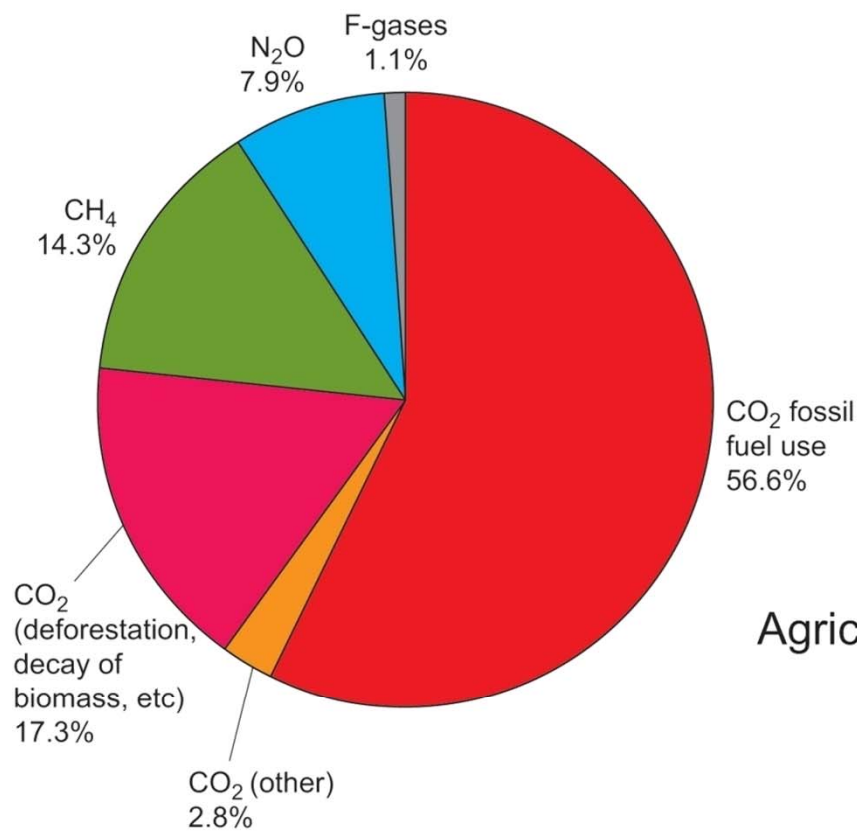


Radiative Forcing

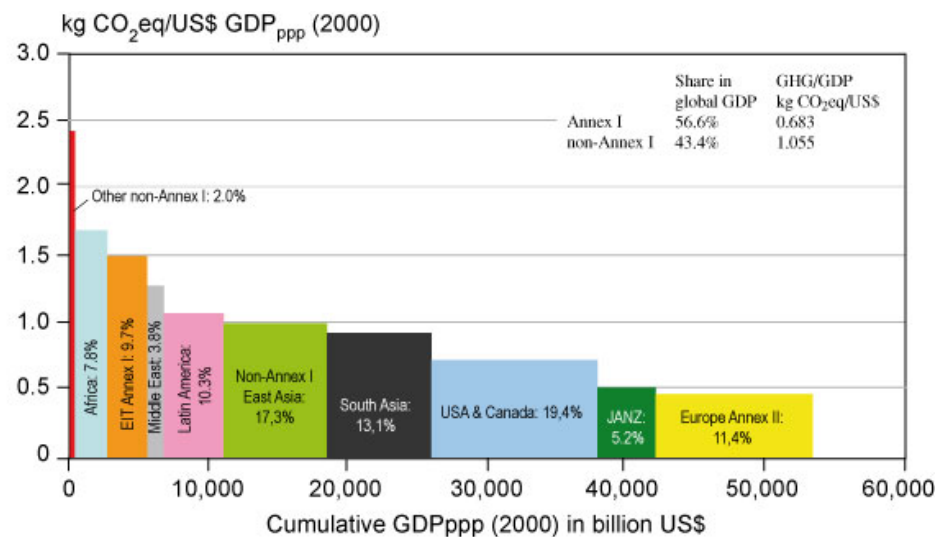
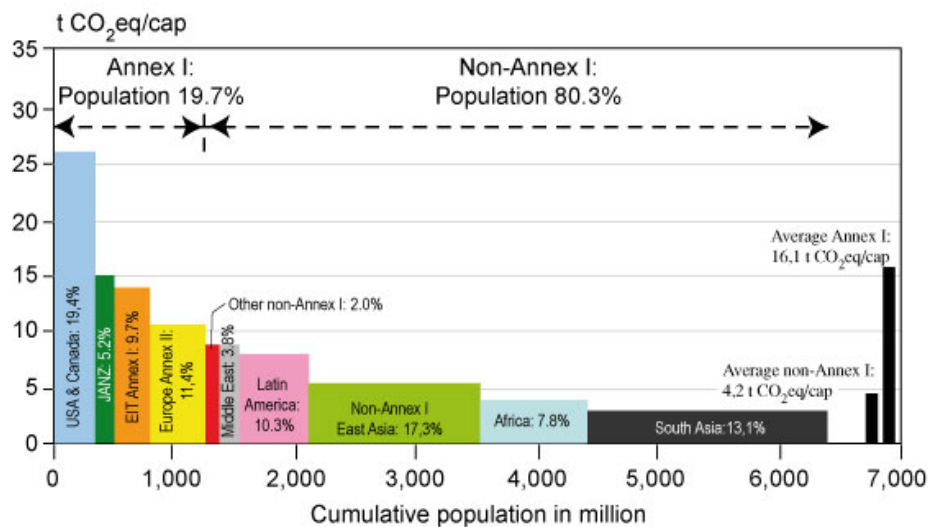
- The understanding of anthropogenic warming and cooling influences on climate has improved since the Third Assessment Report (TAR), leading to *very high confidence* that the globally averaged net effect of human activities since 1750 has been one of warming, with a radiative forcing of $+1.6$ [$+0.6$ to $+2.4$] $W m^{-2}$.



2004 – Global Emissions



Global Emissions





Task Force on National Greenhouse Gas Inventories

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TFI



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Task Force on National Greenhouse Gas Inventories - TFI

- IPCC/OECD/IEA GHG Inventories programme started 1991
- Since 1999 IPCC TFI (TSU at IGES/Japan)
- Objectives and activities
 - 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 Parties of the United Nations Framework Convention on Climate Change (UNFCCC).



Inventory Guidelines

- Guidelines give best practice methods
 - ❖ Virtually all sources covered
 - ❖ Alternative methods of different complexity and data needs may be provided with guidance on choice
- These have been developed aiming to be applicable in all countries (both methods and default data are provided)
 - ❖ Ensure best use is made of resources
 - ❖ Can be used with few resources, if necessary
- Have been extensively reviewed to ensure the widest applicability

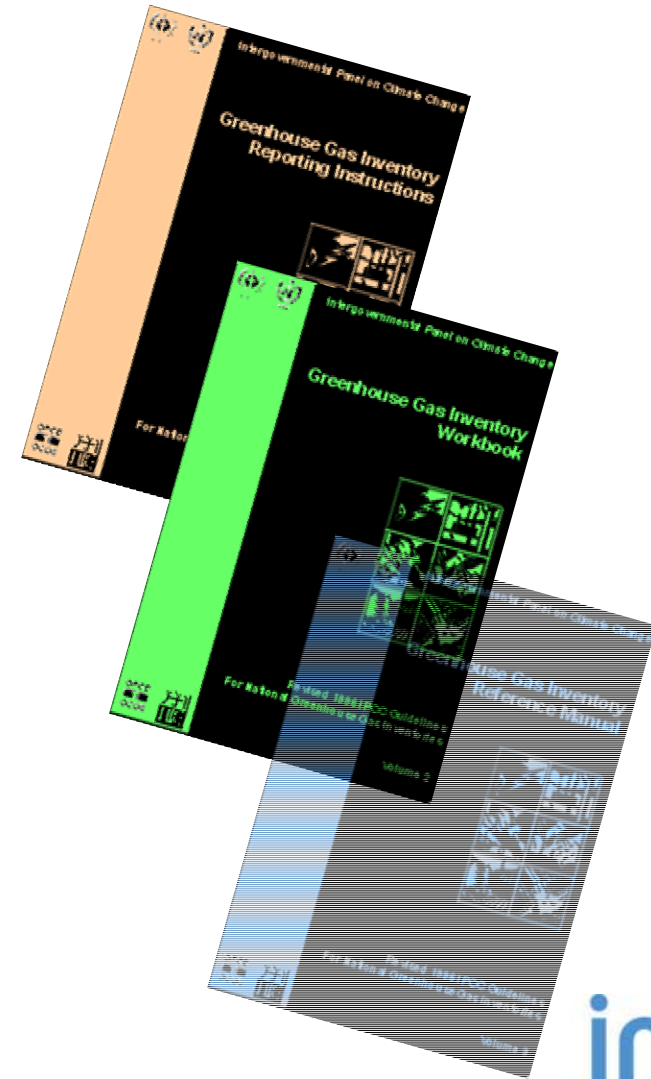
IPCC Guidelines for National Greenhouse Gas Inventories

- 1995 Guidelines
- 1996 Revised IPCC Guidelines
- 2000 Good Practice Guidance and Uncertainty Management
- 2003 Good Practice Guidance for Land Use, Land-Use Change and Forestry
- 2006 IPCC Guidelines



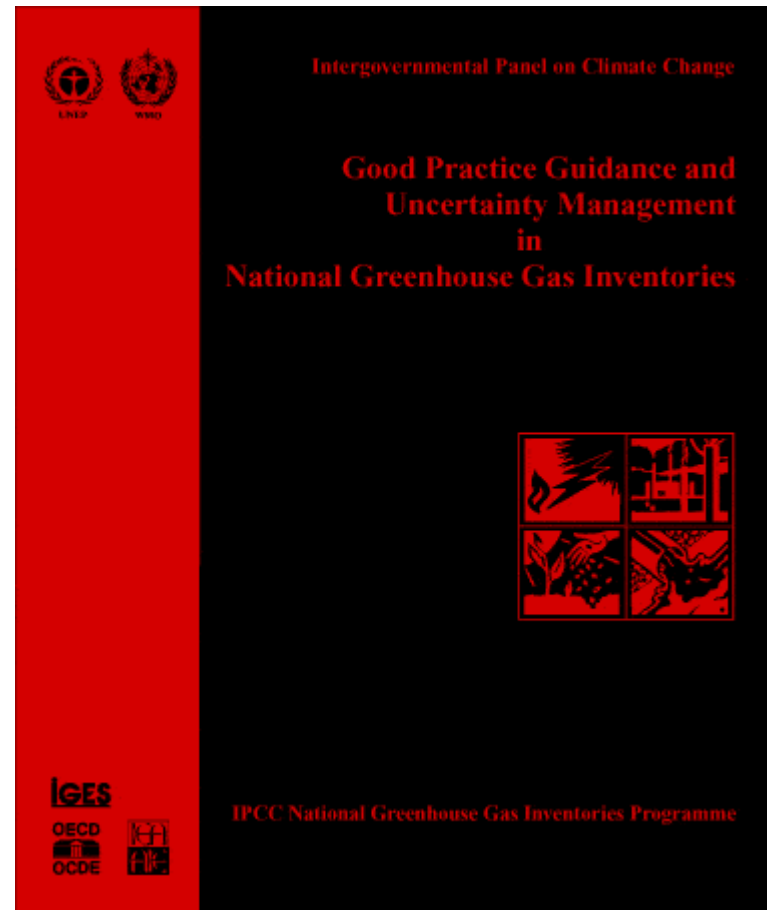
Revised 1996 IPCC Guidelines for National Greenhouse Gas Inventories

- Vol 1 Reporting Instructions
- Vol 2 Workbook and Software
- Vol 3 Reference Manual



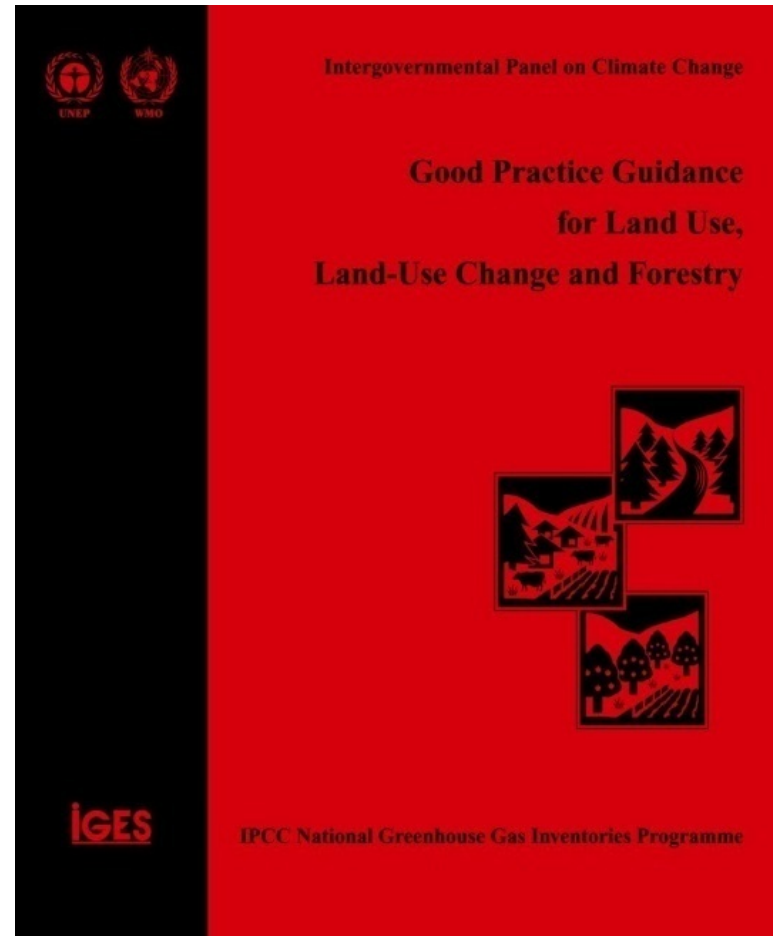
Good Practice Guidance (1)

- Good Practice Guidance and Uncertainty Management in National Greenhouse Gas Inventories "GPG 2000"
- Complements 1996 Guidelines, published 2000
- *good practice guidance* defined as: inventories that are neither over nor underestimate so far as can be judged, and in which uncertainties are reduced as far as practicable



Good Practice Guidance (2)

- Good Practice Guidance for Landuse, Landuse Change and Forests - "GPG LULUCF" - Published in 2003
- Extends Good Practice to LULUCF sectors
- Provides supplementary methods and good practice guidance for estimating, measuring, monitoring and reporting on carbon stock changes and greenhouse gas emissions from LULUCF activities under Article 3, paragraphs 3 and 4, and Articles 6 and 12 of the Kyoto Protocol

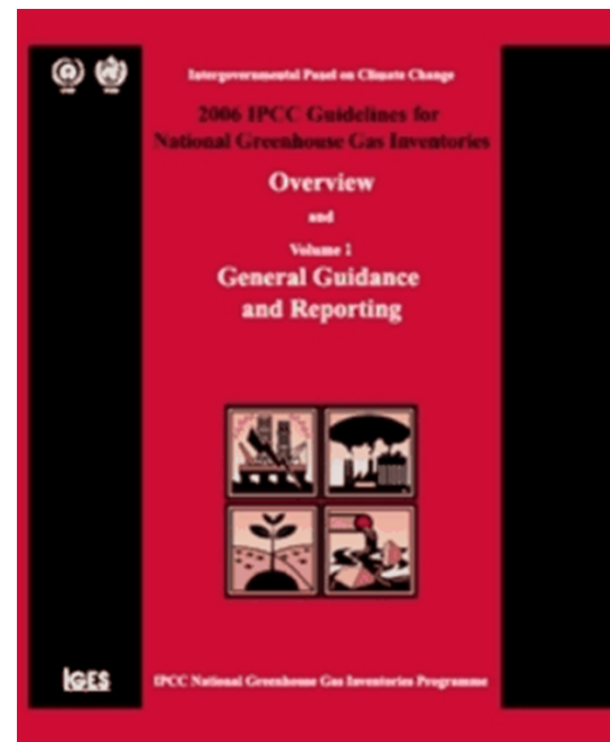


2006 IPCC Guidelines

The 2006 IPCC Guidelines consists of 5 volumes based on cross-cutting issues and individual sectors:

Overview

1. General Guidance and Reporting
2. Energy
3. Industrial Processes and Product Use (IPPU)
4. Agriculture, Forestry and Other Land Use (AFOLU)
5. Waste



Emission Factor Database (EFDB)

IPCC NGGIP Logged user: Not logged in

IPCC web sites

[Home](#) [Login](#) [Find EF](#) [Single Input](#) [Mini-Batch Import](#) [Documents](#) [Downloads](#) [Help](#)

Main Page Language: English OK

Welcome to EFDB!

All users are kindly invited to pay attention to this note. Guidance for users (as of 26 October 2002) can be downloaded (click [here](#)). The EFDB User Manual will be made available in due course.

- **Nature of EFDB:** 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.**
- **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 for the first time, please contact the [Technical Support Unit](#) to obtain your login name and password. Acceptance of such proposals will be subject to decisions 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.

[Http://www.ipcc-nggip.iges.or.jp/EFDB/main.php](http://www.ipcc-nggip.iges.or.jp/EFDB/main.php)

IPCC Inventory Software

2006 IPCC Software for National Greenhouse Gas Inventories - maya - [Worksheets]

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

IPCC 2006 Categories

- 1 - Energy
 - 1.A - Fuel Combustion Activities
 - 1.A1 - Energy Industries
 - 1.A1.a - Main Activity Electricity and Heat P
 - 1.A1.ai - Electricity Generation
 - 1.A1.ii - Combined Heat and Power Ge
 - 1.A1.iii - Heat Plants
 - 1.A1.b - Petroleum Refining
 - 1.A1.c - Manufacture of Solid Fuels and Oth
 - 1.A1.ci - Manufacture of Solid Fuels
 - 1.A1.cii - Other Energy Industries
 - 1.A2 - Manufacturing Industries and Constructio
 - 1.A2.a - Iron and Steel
 - 1.A2.b - Non-Ferrous Metals
 - 1.A2.c - Chemicals
 - 1.A2.d - Pulp, Paper and Print
 - 1.A2.e - Food Processing, Beverages and To
 - 1.A2.f - Non-Metallic Minerals
 - 1.A2.g - Transport Equipment
 - 1.A2.h - Machinery
 - 1.A2.i - Mining (excluding fuels) and Quarryin
 - 1.A2.j - Wood and wood products
 - 1.A2.k - Construction
 - 1.A2.l - Textile and Leather
 - 1.A2.m - Non-specified Industry
 - 1.A3 - Transport
 - 1.A3.a - Civil Aviation
 - 1.A3.ai - International Aviation Internati
 - 1.A3.ii - Domestic Aviation
 - 1.A3.b - Road Transportation
 - 1.A3.bi - Cars
 - 1.A3.bi1 - Passenger cars with 3-wa
 - 1.A3.bi2 - Passenger cars without 3
 - 1.A3.bii - Light-duty trucks
 - 1.A3.bii1 - Light-duty trucks with 3-
 - 1.A3.bii2 - Light-duty trucks without
 - 1.A3.biii - Heavy-duty trucks and buses
 - 1.A3.biv - Motorcycles
 - 1.A3.bv - Evaporative emissions from ve
 - 1.A3.bvi - Urea-based catalysts
 - 1.A3.c - Railways
 - 1.A3.d - Water-borne Navigation
 - 1.A3.di - International water-borne navie

Fuel Combustion Activities

Worksheet

Sector: Energy
 Category: Fuel Combustion Activities
 Subcategory: 1.A.1.ai - Electricity Generation
 Sheet: CO2, CH4 and N2O from fuel combustion by source categories - Tier 1

Data

Fuel Type: (All fuels) Conversion Factor Type: NCV GOV

Fuel	Energy Consumption		CO2		CH4		N2O				
	A Consumption (Mass, Volume or Energy Unit)	B Conversion Factor (TJ/Unit) (NCV)	C Consumption (TJ) (C=A*B)	D CO2 Emission Factor (kg CO2/TJ)	Z Amount Captured (Gg CO2)	E CO2 Emission S (Gg CO2) E=C*D/I 0%-Z	F CH4 Emission Factor (kg CH4/TJ)	G CH4 Emissions (Gg CH4) G=C*F/I 0 %	H N2O Emission Factor (kg N2O/TJ)	I N2O Emissions (Gg N2O) I=C*H/I 0 %	
Anthracite	1000	Ge	267	26700	96300	26...	1	0.0...	1.5	0.04...	
Coking Coal	2000	Ge	282	56400	94600	53...	1	0.0...	1.5	0.0846	
Other Bitu...	3000	Ge	258	77400	94600	73...	1	0.0...	2	0.1548	
Sub-Bitumi...	4000	Ge	189	75600	96100	72...	1	0.0...	1.5	0.1134	
Lignite	5000	Ge	119	59500	101000	500	55...	1	0.0...	1.5	0.08...
Oil Shale /...	500	Ge	89	4450	107000	47...	NE 0	1.5	0.00...		
Brown Coal...	600	Ge	207	12420	97500	12...	1	0.0...	1.5	0.01...	
Orimulsion	300	Ge	275	8250	73000	63...	3	0.0...	0.6	0.00...	
Total				320720		303791		0.33277		0.51236	

Time Series data entry... Delete selected

IPCC 2006 Guidelines

Worksheet remarks

1.A.1.ai - Time Series

Emissions (Gg CO2 Equivalents)

* Base year for assessment of uncertainty in trend: 1990

Gas: CARBON DIOXIDE (CO2)

Country/Territory: Slovakia Inventory Year: 1994 Base year for assessment of uncertainty in trend: 1990 CO2 Equivalents: SAR GWPs (100 year time horizon) Database file

The Future

- Software
 - ❖ New IPCC Inventory Software was released in May 2012, and an updated version with some bugs rectified was released in December 2012. The installer can be downloaded from:
<http://www.ipcc-nggip.iges.or.jp/software/new.html>
- EFDB
 - ❖ Continue improvement (e.g., more user-friendly interface) and Publicise
 - ❖ More actively search out data (e.g., data meetings, literature search)
- Response to request from UNFCCC – production of two Methodology Reports
 - ❖ 2013 Supplement to the 2006 IPCC Guidelines for National Greenhouse Gas Inventories: Wetlands
 - ❖ 2013 Revised Supplementary Methods and Good Practice Guidance Arising from the Kyoto Protocol
- Awareness Raising
- Support to users of the guidelines

Summary

- The IPCC produces methodology reports on GHG Inventories as well as assessment reports on climate change.
- IPCC reports are based on the available literature and information sources and are extensively reviewed prior to acceptance.
- The latest IPCC Assessment report emphasises the significance of emissions of greenhouse gases
- The IPCC approach has evolved over time as experience and knowledge has grown
- IPCC methodologies are used for reporting to the UNFCCC
- The latest guidance, the 2006 IPCC Guidelines for National Greenhouse Gas Inventories represent the best available methods applicable globally for comparable and consistent inventories

Task Force on National Greenhouse Gas Inventories

Thank You

Any Questions?



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