



IPCC Inventory Software

IPCC TFI Side-event
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ipcc

INTERGOVERNMENTAL PANEL ON climate change



Introduction

The IPCC Inventory Software implements the 2006 IPCC Guidelines for National Greenhouse Gas Inventories. It can also be used for reporting under the 1996 IPCC Guidelines

- ✓ it allows countries to utilise the improvements in the methodologies and default values since 1996

The IPCC launched the IPCC Inventory Software in 2012

The latest officially published version is available from:

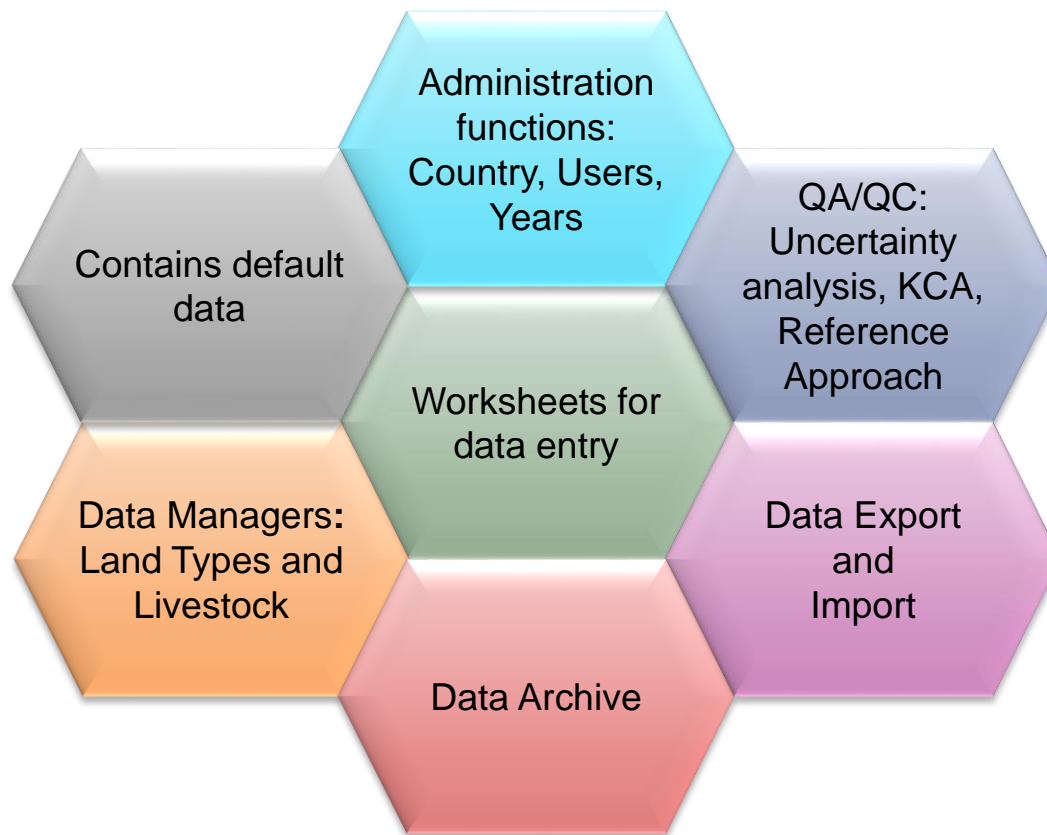
<http://www.ipcc-nggip.iges.or.jp/software/index.html>

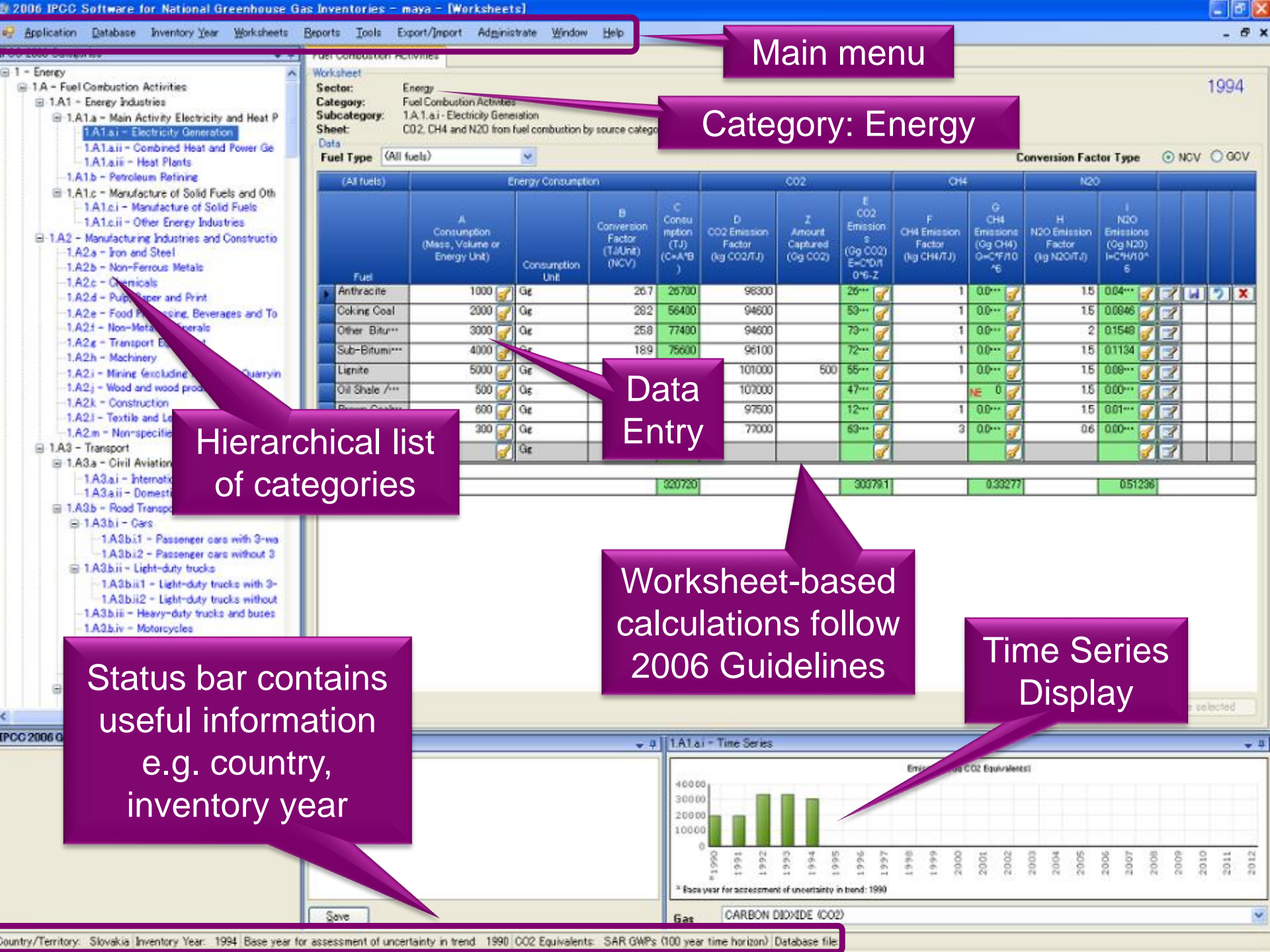
IPCC Inventory Software - Key features

The IPCC Inventory Software can assist inventory compilers in using the IPCC Guidelines

- stand alone software with modest hardware requirements
- data entry in worksheets following the 2006 IPCC Guidelines for ease-of-use
- it can be used for the whole inventory or just individual categories
- allows different parts of the inventory to be developed simultaneously
- can be used when reporting 1996 or 2006 Guidelines
- provides default data from the 2006 IPCC Guidelines but gives users the flexibility to use their own country-specific information
- includes Uncertainty and Key Category Analysis
- aids QA/QC
- outputs in non-Annex I National Communications format
- FREE!

Software Functions





Main menu

Category: Energy

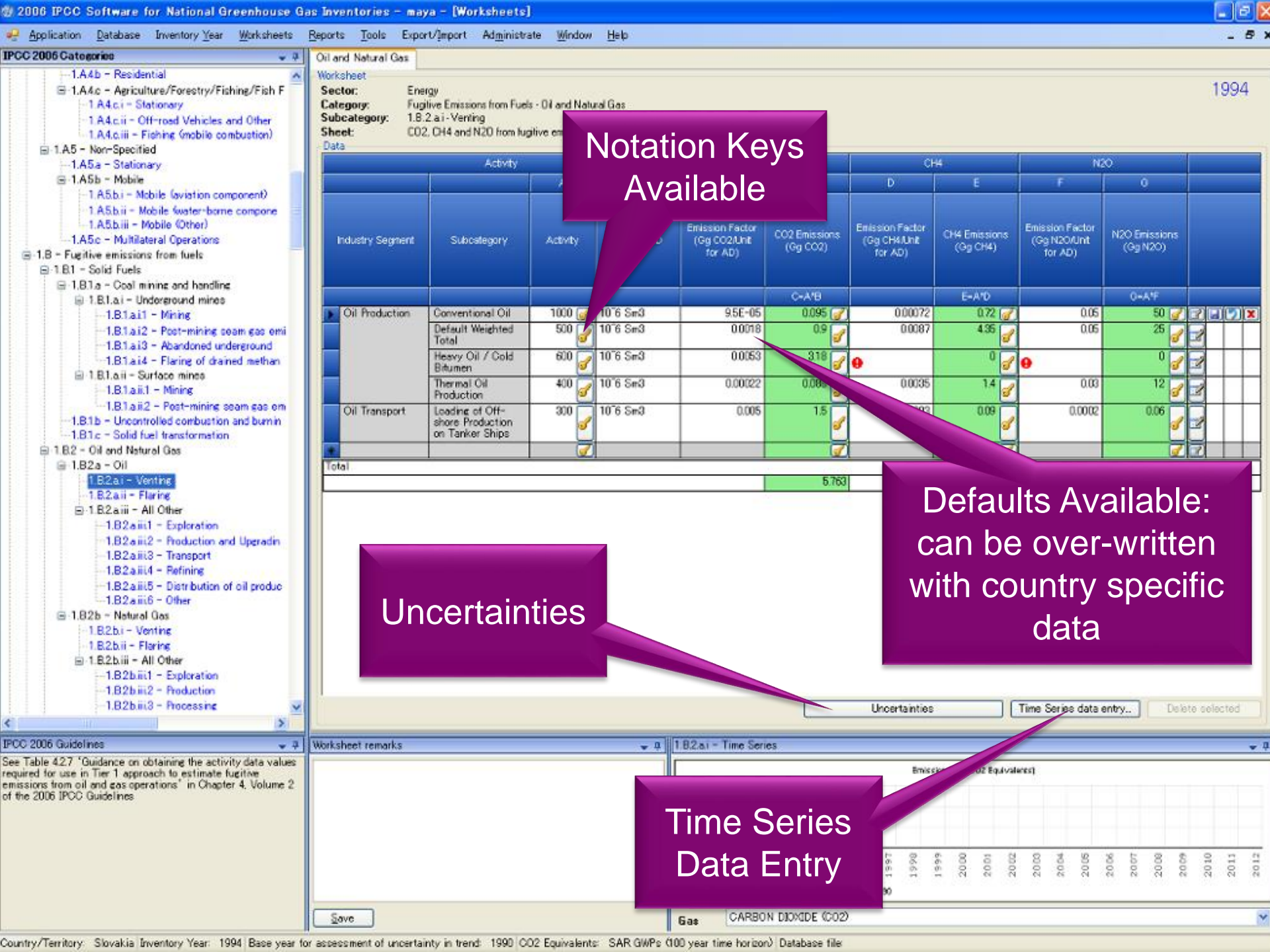
Hierarchical list of categories

Data Entry

Worksheet-based calculations follow 2006 Guidelines

Time Series Display

Status bar contains useful information e.g. country, inventory year



Notation Keys Available

Uncertainties

Defaults Available:
can be over-written
with country specific
data

Time Series
Data Entry

Save

Gas CARBON DIOXIDE (CO2)

Reports

Report	Level	Contents
Summary	1.A.1	Emissions
Short summary	1.A	Emissions
Sectoral	1.A.1.a.ii (most disaggregated level)	Emissions
Background	1.A.1.a.ii (most disaggregated level)	Activity data Emissions

Note: *All reports can be exported as MS Excel file*

NAI Reporting Table

- The IPCC Inventory Software follows the format of Tables in Annex to Decision 17/CP.8 (*Guidelines for the preparation of National Communications from Parties not included in Annex I to the Convention*)
- Main Menu
 - Export/Import
 - NAI Reporting Tables

NAI Reporting Table

IPCC Inventory Software - sngarize - [NAI Reporting Tables]

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

NAI Reporting Table 1 NAI Reporting Table 2

Greenhouse gas source and sink categories	Net CO2 (Gg)	CH4 (Gg)	N2O (Gg)	CO (Gg)	NOx (Gg)	NMVOCs (Gg)	SOx (Gg)
Total National Emissions and Removals	0.000	0.000	0.000	0.000	0.000	0.000	0.000
1 - Energy	0.000	0.000	0.000	0.000	0.000	0.000	0.000
1A - Fuel Combustion	0.000	0.000	0.000	0.000	0.000	0.000	0.000
1A1 - Energy	0.000	0.000	0.000	0.000	0.000	0.000	0.000
1A2 - Manufacturing Industries and Construction (ISIC)	0.000	0.000	0.000	0.000	0.000	0.000	0.000
1A3 - Transport	0.000	0.000	0.000	0.000	0.000	0.000	0.000
1A4 - Other Sectors	0.000	0.000	0.000	0.000	0.000	0.000	0.000
1A5 - Other	0.000	0.000	0.000	0.000	0.000	0.000	0.000
1B - Fugitive Emissions from Fuels	0.000	0.000	0.000	0.000	0.000	0.000	0.000
1B1 - Solid Fuels	0.000	0.000	0.000	0.000	0.000	0.000	0.000
1B2 - Oil and Natural Gas	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2 - Industrial Processes	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2A - Mineral Products	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2B - Chemical Industry	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2C - Metal Production	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2D - Other Production	0.000	0.000		0.000	0.000	0.000	0.000
2E - Production of Halocarbons and Sulphur Hexafluoride				0.000	0.000	0.000	0.000
2F - Consumption of Halocarbons and Sulphur Hexafluoride				0.000	0.000	0.000	0.000
2G - Other (please specify)	0.000	0.000	0.000	0.000	0.000	0.000	0.000
3 - Solvent and Other Product Use	0.000	0.000	0.000	0.000	0.000	0.000	0.000

Number of decimal places: 3 Zero padding

Export to Excel

Documentation box

Save

Country/Territory: Japan | Inventory Year: 1990 | Base year for assessment of uncertainty in trend: 1990 | CO2 Equivalents: SAR GWPs (100 year time horizon) | Database file: (C:\ProgramData\IPCC2006Software\ipcc2006.mdb)

Tools

Click Tools –
Uncertainty Analysis

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

2006 IPCC Categories

- 4.A – Solid Waste Disposal
 - 4.A.1 – Managed Waste Disposal Sites
 - 4.A.2 – Unmanaged Waste Disposal Sites
 - 4.A.3 – Uncategorized Waste Disposal Site
- 4.B – Biological Treatment of Solid Waste
- 4.C – Incineration and Open Burning of Waste
 - 4.C.1 – Waste Incineration
 - 4.C.2 – Open Burning of Waste
- 4.D – Wastewater Treatment and Discharge
 - 4.D.1 – Domestic Wastewater Treatment
 - 4.D.2 – Industrial Wastewater Treatment a
- 4.E – Other (please specify)
- 5 – Other

Parameters Methane C... Worksheet

Sector: Waste
Category: Metha...
Subcategory: 4.A - Solid Waste Disposal
Sheet: Results

Data

Methane generated												
Year	Food	Garden	Paper	Wood	Textile	Nappies	Sludge	Industrial	Total	Methane recovery	Methane Emissions	
	A	B	C	D	E	F	G	H	I	J	$M = (I-J) * (1 - OX)$	
	(Gg)	(Gg)	(Gg)	(Gg)	(Gg)	(Gg)	(Gg)	(Gg)	(Gg)	(Gg)	(Gg)	
1950	0	0	0	0	0	0	0	0	0	0	0	
1951	0.52016	0.00100	0.20000	0.10006	0.00000	0.01000	0.10000	0.10000	2.01853	9.53118	0	9.53118
1952	0.55575	0.00100	0.20000	0.10006	0.00000	0.01000	0.10000	0.10000	2.01853	18.60412	0	18.60412
1953	3.025	0.00100	0.20000	0.10006	0.00000	0.01000	0.10000	0.10000	2.01853	27.24109	0	27.24109
1954	35.973	0.00100	0.20000	0.10006	0.00000	0.01000	0.10000	0.10000	2.01853	35.46326	0	35.46326
1955	43.461	0.00100	0.20000	0.10006	0.00000	0.01000	0.10000	0.10000	2.01853	43.29079	0	43.29079
1956	50.008	0.00100	0.20000	0.10006	0.00000	0.01000	0.10000	0.10000	2.01853	50.74282	0	50.74282
1957	57.4219	0.00100	0.20000	0.10006	0.00000	0.01000	0.10000	0.10000	2.01853	57.83759	0	57.83759
1958	64.5094	0.00100	0.20000	0.10006	0.00000	0.01000	0.10000	0.10000	2.01853	64.5094	0	64.5094

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

Uncertainty Analysis – Approach 1 (Table 3.2)

Base year for assessment of uncertainty in trend 1990 Year T 1994

2006 IPCC Categories	Gas	Base Year emissions or removals (Gg CO2 equivalent)	Year T emissions or removals (Gg CO2 equivalent)	Activity Data Uncertainty (%)
4.A – Solid Waste Disposal	CH4	3598.6	3705.4	3.0
4.B – Biological Treatment of Solid Waste	CH4	81.8	0.0	0.0
	N2O	39.5	0.0	0.0
4.C – Incineration and Open Burning of Waste				
4.C.1 – Waste Incineration	CO2	1419.2	5501.4	4.0
	CH4	11.7	1.9	4.0
	N2O	0.0	480.1	4.0
4.C.2 – Open Burning of Waste	CO2	69.2	2203.1	4.0
	CH4	0.0	4.2	4.0
	N2O	1.0	34.1	4.0
4.D – Wastewater Treatment and Discharge				
4.D.1 – Domestic Wastewater Treatment and Discharge	CH4	5.0	0.1	5.0
	N2O	0.2	0.1	3.0

Number of decimal places 1 Zero padding

Refresh Data Export to Excel

Documentation box

Click “Refresh Data”
to perform analysis

NE (CH4) Emissions (Gg CO2 Equivalents)

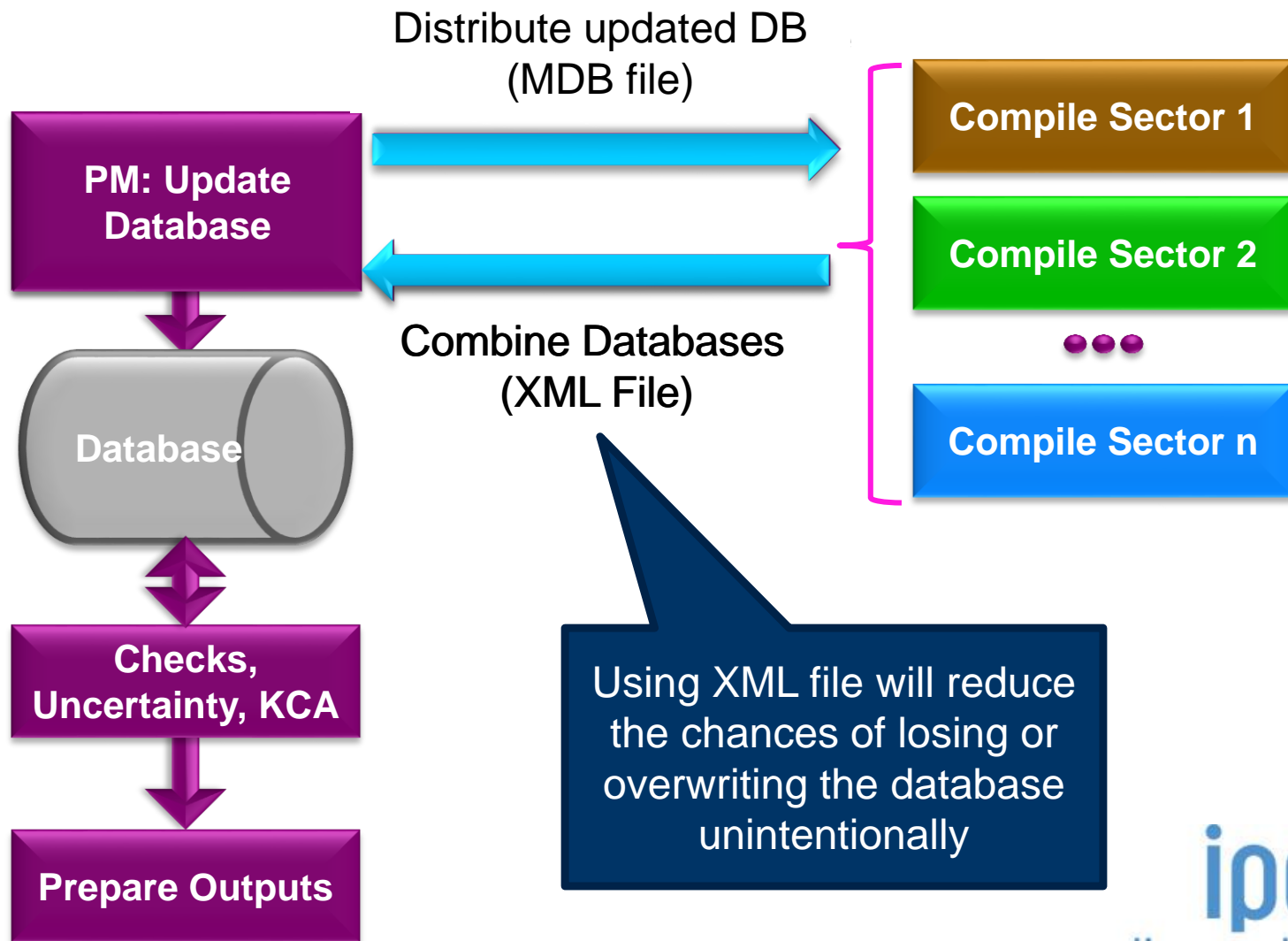
Year	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
Emissions

in trend: 1990

Multiple Users

Project manager

Sectoral Experts(s)



Support

- The TSU is supporting the IPCC Inventory Software:
 - Help Desk E-mail: ipcc-software@iges.or.jp
 - Web Forum: <https://discussions.zoho.com/ipccinventorysoftware/>
✓ *please, read the User Manual*
- TSU will maintain the IPCC Inventory Software and is planning to implement the following:
 - Tier 2 methods
 - Wetlands Supplement

Implementation of Tier 2 Methodology for the IPCC Inventory Software

Tier 2 Implementation

- TFI-TSU has adopted a phased approach in implementing tier 2 work:
- Work on Tier 2 methods in the 2006 IPCC Guidelines for most categories under Energy , IPPU and Waste Sectors has been completed and are implemented in version 2.54
- Details on Tier 2 coverage maybe found at:

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

Categories (non-AFOLU) with adjustments or with new worksheets to perform Tier 2 estimates

For the other categories no new Tier 2 worksheets are included, either because the Tier 1 worksheets are already suitable for Tier 2 (Energy) or because it was not possible to include them since significant elaboration is required (just a few, Iron and Steel, Ferroalloys, Petrochemicals, Aluminium-CO2).

#	Category	Gas							
		CO2	CH4	N2O	HFCs	PFCs	SF6	NF3	Other
	1 - Energy								
	1.A - Fuel Combustion Activities								
	1.A.3 - Transport								
	1.A.3.a - Civil Aviation								
1	1.A.3.a.i - International Aviation (International bunkers)	x	x	x					
2	1.A.3.a.ii - Domestic Aviation	x	x	x					
	2 - Industrial Processes and Product Use								
	2.A - Mineral Industry								
3	2.A.1 - Cement production	x							
4	2.A.2 - Lime production	x							
	2.B - Chemical Industry								
5	2.B.2 - Nitric Acid Production			x					
6	2.B.3 - Adipic Acid Production			x					
7	2.B.4 - Caprolactam, Glyoxal/Glyoxylic Acid Production			x					
8	2.B.6 - Titanium Dioxide Production	x							
	2.B.9 - Fluorochemical Production								
9	2.B.9.a - By-product emissions				x	x	x		x
	2.C - Metal Industry								
10	2.C.3 - Aluminium production	x				x			
11	2.C.4 - Magnesium production	x					x		
	2.D - Non-Energy Products from Fuels and Solvent Use								
12	2.D.1 - Lubricant Use	x							
13	2.D.2 - Paraffin Wax Use	x							
	2.E - Electronics Industry								
14	2.E.1 - Integrated Circuit or Semiconductor				x	x	x	x	x
15	2.E.2 - TFT Flat Panel Display				x	x	x	x	x
16	2.E.3 - Photovoltaics				x	x	x	x	x
17	2.E.4 - Heat Transfer Fluid					x			
	2.G - Other Product Manufacture and Use								
18	2.G.1.c - Disposal of Electrical Equipment					x	x		
	2.G.2 - SF6 and PFCs from Other Product Uses								
19	2.G.2.a - Military Applications						x		
20	2.G.2.b - Accelerators						x		
	4 - Waste								
	4.C - Incineration and Open Burning of Waste								
21	4.C.1 - Waste Incineration	x	x	x					
22	4.C.2 - Open Burning of Waste	x	x	x					
	4.D - Wastewater Treatment and Discharge								
23	4.D.1 - Domestic Wastewater Treatment and Discharge		x						
24	4.D.2 - Industrial Wastewater Treatment and Discharge		x						

Tier 1/ Tier 2

IPCC Inventory Software - shermanau - [Worksheets]

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

2006 IPCC Categories

- 2.A.4.b - Other Uses of S
- 2.A.4.c - Non Metallurgic
- 2.A.4.d - Other (please s
- 2.A.5 - Other (please specify
- 2.B - Chemical Industry
 - 2.B.1 - Ammonia Production
 - 2.B.2 - Nitric Acid Production
 - 2.B.3 - Adipic Acid Productio
 - 2.B.4 - Caprolactam, Glyoxal
 - 2.B.5 - Carbide Production
 - 2.B.6 - Titanium Dioxide Pro
 - 2.B.7 - Soda Ash Production
 - 2.B.8 - Petrochemical and C
 - 2.B.8.a - Methanol
 - 2.B.8.b - Ethylene
 - 2.B.8.c - Ethylene Dichl
 - 2.B.8.d - Ethylene Oxide
 - 2.B.8.e - Acrylonitrile
 - 2.B.8.f - Carbon Black
 - 2.B.9 - Fluorochemical Prod
 - 2.B.9.a - By-product emis
 - 2.B.9.b - Fugitive Emissio
 - 2.B.10 - Other (Please specif
- 2.C - Metal Industry
 - 2.C.1 - Iron and Steel Produ
 - 2.C.2 - Ferroalloys Productio
 - 2.C.3 - Aluminium productio
 - 2.C.4 - Magnesium productio
 - 2.C.5 - Lead Production
 - 2.C.6 - Zinc Production
 - 2.C.7 - Other (please specify
- 2.D - Non-Energy Products from
 - 2.D.1 - Lubricant Use

2006 IPCC Guidelines

Tier 2

Nitric Acid Production - Tier 2

Worksheet

Sector: Industrial Processes and Product Use

Category: Chemical Industry

Subcategory: 2.B.2 - Nitric Acid Production

Sheet: 1 of 1

Data

A	B	C	D	E	
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 (Gg)	
					$E = A*B*(1-C*D)/10^6$
1500	9	0.925	0.89	0.00239	
Total	1500			0.00239	

1990

Uncertainties Time Series data entry... Delete selected rows...

Worksheet remarks

2.B.2 - Time Series

NITROUS OXIDE (N2O) Emissions (Gg CO2 Equivalents)

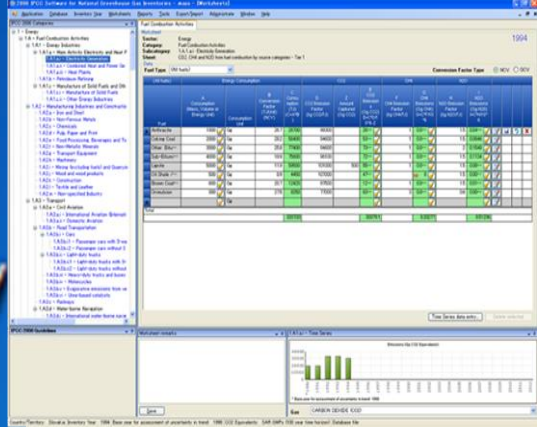
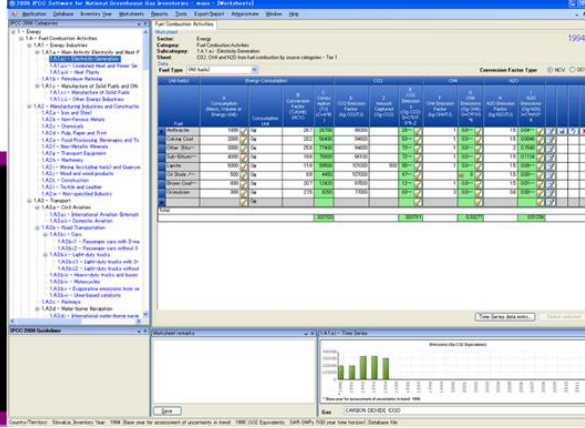
* Base year for assessment of uncertainty in trend: 1990

Gas NITROUS OXIDE (N2O)

Country/Territory: Japan Inventory Year: 1990 Base year for assessment of uncertainty in trend: 1990 CO2 Equivalents: SAR GWPs (100 year time horizon) Database file: (C:\ProgramData\IPCC2006Software\ipcc2006.mdb)

Implementation of Tier 2 methods - AFOLU Sector.

- At present (IPCC) software implements the 2006 IPCC Guidelines for National Greenhouse Gas Inventories at Tier 1 for the entire AFOLU sector.
- Development to implement tier 2 methods for the AFOLU sector is underway and includes Wetland Supplement
- Work to implement Agriculture sector has started, LULUCF and Wetland Supplement categories will be implemented after completion of agriculture sector
- Implementation of Wetlands Supplement, is an extension to 2006 IPCC Guidelines dealing with new methodologies for calculating and reporting emissions for inland/coastal, drained/rewetted lands under Land Use sector. (Wetland implementation is at Tier 1).



Thank you for your attention!
Any questions?