



Task Force on National Greenhouse Gas Inventories

IPCC Inventory Software: Tools, Export/Import of Data and Reporting Tables

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Tools

- Reference Approach
 - Produce a first-order estimate of national greenhouse gas emissions based on the energy supplied to a country
- Uncertainty Analysis
 - Quantitative uncertainty analysis is performed by estimating the 95 percent confidence interval of the emissions and removals estimates for individual categories and for the total inventory
- Key Category Analysis
 - A key category is one that is prioritised within the national inventory system because its estimate has a significant influence on a country's total inventory of greenhouse gases in terms of the absolute level, the trend, or the uncertainty in emissions and removals

Uncertainty Analysis

The screenshot displays the IPCC software interface. The 'Tools' menu is open, highlighting 'Uncertainty Analysis'. Below it, a window titled 'Uncertainty Analysis - Approach 1 (Table 3.2)' is shown. This window includes a table with columns for '2006 IPCC Categories', 'Gas', 'Base Year emissions or removals (Gg CO2 equivalent)', 'Year T emissions or removals (Gg CO2 equivalent)', and 'Activity Data Uncertainty (%)'. A bar chart on the right side of the window shows data from 2002 to 2012. A purple callout box points to the 'Uncertainty Analysis' menu item with the text 'Click "Uncertainty Analysis"', and another purple callout box points to the 'Refresh Data' button with the text 'Click to perform analysis'.

Table 3.2: Uncertainty Analysis - Approach 1

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
	N2O			
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	CO2	1419.2	5601.4	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	CH4	5.0	0.1	5.0
	N2O	0.2	0.1	5.0



Uncertainty Analysis

The screenshot displays the IPCC software interface with the 'Uncertainties' dialog box open. The dialog box is titled 'Uncertainties' and shows the following settings:

- Category: 4.A - Solid Waste Disposal
- Activity Data Uncertainties:
 - Lower: -3.00 %
 - Upper: +3.00 %
- Emission Factors Uncertainties:
 - Gas: METHANE (CH4)
 - Lower: -2.00 %
 - Upper: +2.00 %

The background window shows the 'Parameters' tab for 'Methane Correction Factor' with the following settings:

- Country/Territory: Slovakia
- Region: Europe - Eastern
- Climate Zone: Boreal and temperate dry
- *Approach: Waste by composition
- **Activity Data: National data
- Starting year: 1950
- DOCf (fraction of DOC dissimilated): 0.500
- Delay Time (months): 6
- Fraction of methane (F) in developed gas: 0.500
- Conversion Factor, C to CH4: 1.333333
- Oxidation Factor (OX): 0.00
- % paper in industrial waste: 0.00 %

The 'DOC (Degradable organic carbon)' table is also visible:

Category	DOC (weight fraction, wet basis)	Methane generation rate con
Food Waste	0.150	
Garden	0.200	
Paper	0.400	
Wood and straw	0.430	
Textiles	0.240	
Disposable nappies	0.240	
Sewage sludge	0.050	
Industrial Waste	0.150	

A purple callout box with a white border points to the 'Uncertainties' button in the background window, containing the text: 'Click to enter AD and EF uncertainties'.

Key Category Analysis

The screenshot shows the IPCC software interface. The 'Tools' menu is open, highlighting 'Key Category Analysis'. A callout box points to this option with the text "Click 'Key Category Analysis'". Below, a table of IPCC categories is shown, with a callout box pointing to the first few rows with the text "Click to perform analysis".

IPCC Category code	IPCC Category	Greenhouse gas	1994 Ex.t (Gg CO2 Eq)	Ex.t (Gg CO2 Eq)	Lx,t	Cumulative Total of Column F
2.G	Other Product Manufacture and Use	SF6, PFCs	753201.6125	753201.6125	0.7747	0.7747
2.F.6	Other Applications (please specify)	HFCs, PFCs	70736	70736	0.07275	0.84745
1.A.1	Energy Industries – Solid Fuels	CARBON DIOXIDE (CO2)	29743.85	29743.85	0.03059	0.87804
2.F.5	Solvents	HFCs, PFCs	27420	27420	0.0282	0.90625
3.D.1	Harvested Wood Products	CARBON DIOXIDE (CO2)	-22505.91952	22505.91952	0.02315	0.92939
2.E	Electronics Industry	SF6, PFCs, HFCs and ot...	20600.3124	20600.3124	0.02119	0.95058

Export/Import of Data

- Export
 - Worksheet Data
 - CO₂ Equivalents
 - F-Gases Data
 - NAI Reporting Table
- Import
 - Worksheet Data
 - CO₂ Equivalents
 - F-Gases Data

Export of Data

The screenshot displays the IPCC software interface with the 'Export/Import' menu open. The 'Export' option is highlighted, and a sub-menu shows 'Worksheet Data' as the selected option. A callout box points to the 'Worksheet Data' option with the text 'Click the data to export'.

The main window shows a data table for 'Methane generated' with columns for Year, Food (A), Garden (B), Paper (C), Wood (D), Textile (E), Methane recovery (J), and Methane Emissions (M). The data spans from 1950 to 2012.

An 'Export - Worksheet Data' dialog box is open, showing a tree view of '2006 IPCC Categories to export'. The '4 - Waste' category is expanded, and '4.A - Solid Waste Disposal' is selected. A callout box points to the '4.A' category with the text 'Select categories to export data (XML file)'. The 'Export' button at the bottom of the dialog is also highlighted.

In the background, a bar chart titled 'METHANE (CH4) Emissions (Gg CO2 Equivalents)' shows emissions from 1994 to 2012, with a trend line starting at 1990.

Import of Data

The screenshot displays the IPCC software interface with the following components:

- Menu Bar:** Application, Database, Inventory Year, Worksheets, Reports, Tools, Export/Import, Administrate, Window, Help.
- 2006 IPCC Categories:**
 - 4A - Solid Waste Disposal
 - 4A.1 - Managed Waste Disposal Sites
 - 4A.2 - Unmanaged Waste Disposal Sites
 - 4A.3 - Uncategorised Waste Disposal Site
 - 4B - Biological Treatment of Solid Waste
 - 4C - Incineration and Open Burning of Waste
 - 4C.1 - Waste Incineration
 - 4C.2 - Open Burning of Waste
 - 4D - Wastewater Treatment and Discharge
 - 4D.1 - Domestic Wastewater Treatment
 - 4D.2 - Industrial Wastewater Treatment
 - 4E - Other (please specify)
 - 5 - Other
 - 5A - Indirect N₂O emissions from the atmosphere
 - 5B - Other (please specify)
- Parameters:**
 - Worksheet: Waste
 - Category: Methane emissions from Solid Waste Disposal
 - Subcategory: 4A - Solid Waste Disposal
 - Sheet: Results
- Data Table:**

Year	Food (Gg)	Garden (Gg)	Paper (Gg)	Wood (Gg)	Textiles (Gg)	Nappies (Gg)	Sludge (Gg)	Industrial (Gg)	Total (Gg)	Methane recovery (Gg)	Methane Emissions (Gg)
1950	0	0	0	0	0	0	0	0	0	0	0
1951	0.56846	0.02109	0.73922	0.13866	0.09558	0.07662	0.80278	47.34219	57.83759	0	57.83759
1952	1.18382	0.04116	1.44946	0.27339	0.10180	0.08550	0.92997	52.85182	64.5924	0	64.5924
1953	1.668	0.06023	2.13185	0.40664	0.27910	0.11706	1.27235	72.33113	88.53002	0	88.53002
1954	2.08282	0.07838	2.78748	0.53607	0.36010	0.124	1.34783	76.82204	93.81681	0	93.81681
1955	2.52988	0.09565	3.4174	0.66352	0.44210	0.13061	1.41963	80.78367	98.85123	0	98.85123
1956	2.95111	0.11267	4.02263	0.78844	0.52010	0.13689	1.48793	84.58624	103.64548	0	103.64548
1957	3.34771	0.12769	4.80412	0.91089	0.59558	0.14287	1.56289	89.27945	108.21117	0	108.21117
1958	3.72122	0.14255	5.16201	1.03092	0.66785	0.14855	1.61469	91.79254	112.55935	0	112.55935
1959	4.07297	0.15689	5.6996	1.14957	0.73729	0.15396	1.67347	95.1343	116.70051	0	116.70051
1960	4.40424	0.17014	6.21534	1.26389	0.8081	0.1591	1.72939	98.31308	120.64466	0	120.64466
1961	4.71895	0.18263	6.71895	1.37693	0.8801	0.164	1.78258	101.83683	124.4013	0	124.4013
1962	5.01739	0.19441	7.20942	1.48773	0.9469	0.16885	1.83318	104.2131	127.97947	0	127.97947
1963	5.30157	0.20567	7.68496	1.59633	0.9968	0.17308	1.8813	106.8491	131.38778	0	131.38778
1964	5.57202	0.21643	8.14584	1.70279	1.04571	0.17729	1.92788	109.55167	134.63441	0	134.63441
1965	5.83067	0.22671	8.59084	1.80713	1.10033	0.1813	1.97063	112.2273	137.72715	0	137.72715
1966	6.07852	0.23651	9.02084	1.90947	1.15868	0.1851	2.00963	114.8822	140.6734	0	140.6734
1967	6.31567	0.24581	9.43684	2.00967	1.21892	0.1888	2.04483	117.4222	143.48023	0	143.48023
1968	6.54212	0.25461	9.83984	2.10794	1.28022	0.1924	2.07623	119.8622	146.15432	0	146.15432
1969	6.75857	0.26291	10.22984	2.20426	1.34352	0.1959	2.10383	122.2022	148.70206	0	148.70206
1970	6.96502	0.27071	10.60584	2.29858	1.40882	0.1994	2.12783	124.4522	151.12953	0	151.12953
- Import - Worksheet Data Dialog:**
 - XML import file: [Empty field]
 - XML import version: [Empty field]
 - Source inventory year: [Empty field]
 - Number of records: [Empty field]
 - 2006 IPCC Categories to import: [Empty list]
 - Buttons: Open..., View XML file, Import, Close
- Chart:** Bar chart titled 'METHANE (CH₄) Emissions (Gg CO₂ Equivalents)' showing emissions from 1950 to 2012. The x-axis is labeled 'Year' and the y-axis is labeled 'Gas' with 'METHANE (CH₄)' selected.



Reporting Tables

The screenshot displays the IPCC reporting software interface. The 'Reports' menu is highlighted, with 'Waste' and 'Sectoral' sub-options also highlighted. A large purple arrow points from the 'Reports' menu to a callout box that says 'Click "Reports"'. Below this, a detailed table titled 'Table 4 WASTE Sectoral Table' is shown, detailing emissions of CO2, CH4, N2O, NOx, CO, NMVOCs (1), and SO2 for various waste categories from 1990 to 2012. The '4 - Waste' category shows a total CO2 emission of 7704.540 Gg and a total CH4 emission of 177.341 Gg. A bar chart at the bottom right shows 'METHANE (CH4) Emissions (Gg CO2 Equivalents)' from 1990 to 2012, with values increasing from approximately 110,000 Gg in 1990 to over 190,000 Gg in 2012. An 'Export to Excel' button is highlighted in the bottom right corner of the table view.

Year	A (Gg)	B (Gg)	C (Gg)	D (Gg)	F (Gg)	G (Gg)	H (Gg)	I (Gg)	J (Gg)	M = (I-J) * (1-Ox) (Gg)
1950	0	0	0	0	0	0	0	0	0	0
1951	0.56846	0.02109	0.73922	0.13906	0.09562	0.19753	7.81953	9.53118	0	9.53118
1952	1.10382	0.04115	1.44946	0.27339	0.1875	0.26936	15.26576	18.60412	0	18.60412
1953	1.608	0.06023	2.13185	0.40604	0.27677	0.03614	22.33925	27.24109	0	27.24109
1954	2.08282	0.07938	2.78749	0.53607	0.36058				0	35.46326
1955	2.52998	0.09565	3.4174	0.68352	0.44207				0	43.29079
1956	2.96111	0.11287	4.02263	0.78844	0.52036				0	50.74282
1957	3.34771	0.12769	4.60412	0.91089	0.59558				0	57.83759
1958	3.72122	0.14265	5.16281	1.03092	0.66785				0	64.5924
1959	4.07297	0.15669	5.6996	1.14857	0.73729				0	71.02376
1960	4.40424	0.17014	6.21534	1.26389	0.804				0	77.14733
1961	4.71822	0.18293	6.71085	1.37693	0.8681				0	82.97802
1962	5.01803	0.19508	7.18694	1.48773	0.92869				0	88.53002
1963	5.29673	0.20667	7.64436	1.59633	0.98886	0.124	1.34783	76.62204	93.81681	93.81681
1964	5.54732	0.21768	8.08384	1.70279	1.04571	0.13061	1.41963	80.70367	98.85128	98.85128
1965	5.79273	0.22815	8.50609	1.80713	1.10033	0.13689	1.48793	84.58624	103.64548	103.64548
1966	6.02385	0.23811	8.91179	1.90941	1.15281	0.14287	1.55289	89.27945	108.21117	108.21117
1967							1.61469	91.79254	112.55935	112.55935
1968							1.67947	95.1943	116.70051	116.70051
1969							1.72939	98.31308	120.64466	120.64466
1970							1.78258	101.33663	124.4019	124.4019
1971							1.83319	104.2131	127.97947	127.97947
1972							1.8813	106.9491	131.38778	131.38778
1973							1.92708	109.55167	134.63441	134.63441
1974							1.97049	112.0339	137.73316	137.73316

Categories	Emissions [Gg]						
	CO2	CH4	N2O	NOx	CO	NMVOCs (1)	SO2
4 - Waste	7704.540	177.341	1.659	0.000	0.000	0.000	0.000
4.A - Solid Waste Disposal	0.000	176.446	0.000	0.000	0.000	0.000	0.000
4.A.1 - Managed Waste Disposal Sites				0.000	0.000	0.000	0.000
4.A.2 - Unmanaged Waste Disposal Sites				0.000	0.000	0.000	0.000
4.A.3 - Uncategorised Waste Disposal Sites				0.000	0.000	0.000	0.000
4.B - Biological Treatment of Solid Waste		0.000	0.000	0.000	0.000	0.000	0.000
4.C - Incineration and Open Burning of Waste	7704.540	0.289	1.659	0.000	0.000	0.000	0.000
4.C.1 - Waste Incineration	5501.401	0.089	1.549	0.000	0.000	0.000	0.000
4.C.2 - Open Burning of Waste	2203.140	0.200	0.110	0.000	0.000	0.000	0.000
4.D - Wastewater Treatment and Discharge	0.000	0.606	0.000	0.000	0.000	0.000	0.000
4.D.1 - Domestic Wastewater Treatment and Discharge		0.003	0.000	0.000	0.000	0.000	0.000
4.D.2 - Industrial Wastewater Treatment and Discharge		0.603	0.000	0.000	0.000	0.000	0.000
4.E - Other (please specify)				0.000	0.000	0.000	0.000



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Thank you

IPCC Inventory Software can be downloaded from
<http://www.ipcc-nggip.iges.or.jp/software/index.html>