



Overview of the IPCC Inventory Software for National Greenhouse Gas Inventories

IPCC TFI Side Event, UNFCCC SB 58

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IPCC Inventory Software

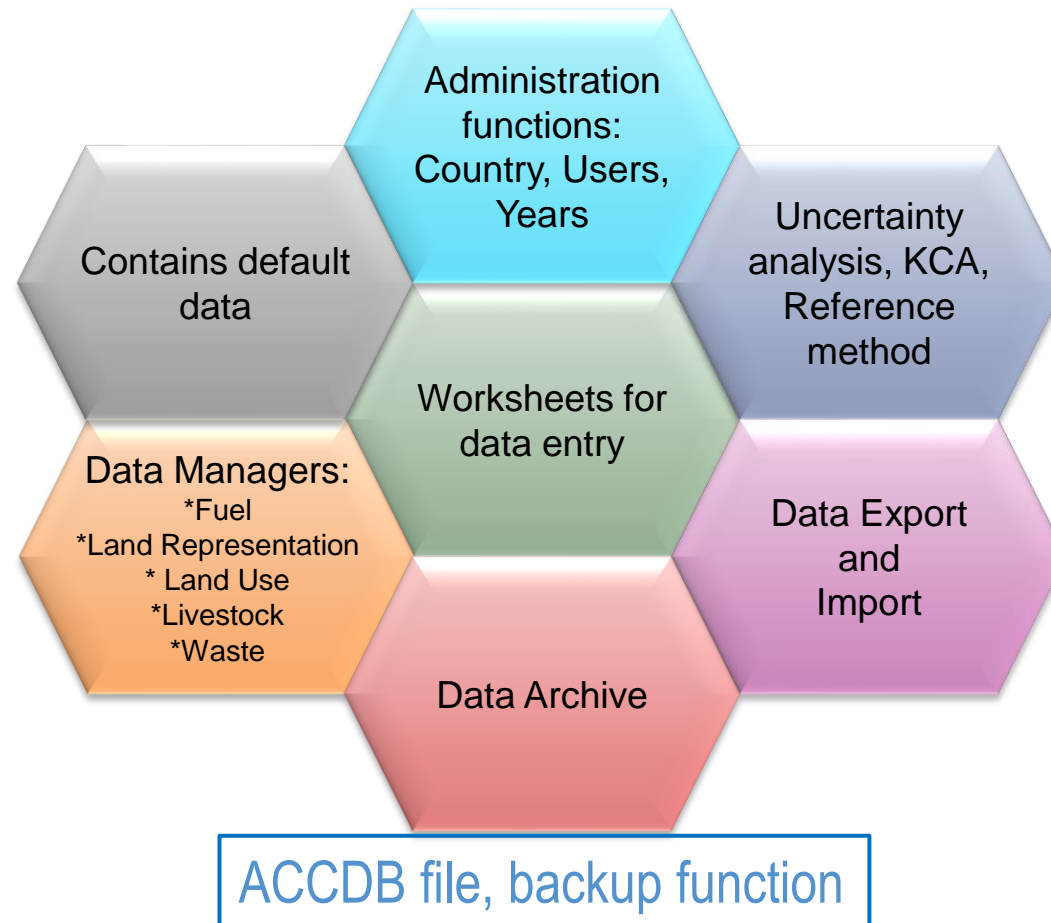
- IPCC Inventory Software was produced in 2012. Initially, it was designed to be a simple tool implementing only Tier 1 methods according to the *2006 IPCC Guidelines*
- The latest version is the version 2.861. It has been released on June 6, 2023 at the SB 58
- The version 2.861 implements the following:
 - all Methodological Tiers & Approaches according to the *2006 IPCC Guidelines*, and its
 - ✓ *Wetlands Supplement* (in lilac colour)
 - ✓ in addition, some elements of the *2019 Refinement* (in magenta colour) to facilitate Interoperability with the UNFCCC CRT Reporting tool
 - Interoperability functionality with the UNFCCC CRT Reporting tool (Energy Sector)

Version 2.861

○ More features

- allows **subnational level of reporting** (*e.g., tracking specific activities or regions*)
- allows for each source/sink to use either a **single methodological Tier or a mix of Tiers**
- allows, in each equation, to **input user-specific values for EFs and parameters**
- allows different categories/sectors to be developed simultaneously
- implements **AR5 GWP₁₀₀** values (*and allows any other user-specific metric to be applied*)
- stores the entire set of information of NGHGI within a single database

Architecture



- MSAccess (ACE OLEDB 12) for WindowsOS
- Microsoft .NET Framework 4.6.2

Categories

Worksheets

Sub-divisions

Default or User-defined process/technology

Default or User-defined parameters

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 Pro
 - 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.3 - Adipic Acid Production
 - 2.B.4 - Caprolactam, Glyoxal and Glyoxylic A
 - 2.B.5 - Carbide Production
 - 2.B.6 - Titanium Dioxide Production
 - 2.B.7 - Soda Ash Production
 - 2.B.8 - Petrochemical and Carbon Black Pro
 - 2.B.8.a - Methanol
 - 2.B.8.b - Ethylene
 - 2.B.8.c - Ethylene Dichloride and Vinyl C
 - 2.B.8.d - Ethylene Oxide
 - 2.B.8.e - Acrylonitrile
 - 2.B.8.f - Carbon Black
 - 2.B.9 - Fluorochemical Production
 - 2.B.9.a - By-product emissions
 - 2.B.9.b - Fugitive Emissions
 - 2.B.10 - 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 Solv
 - 2.D.1 - Lubricant Use
 - 2.D.2 - Paraffin Wax Use
 - 2.D.3 - Solvent Use

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

Worksheet: Nitric Acid Production - Tier 2

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

Subdivision	Production process / technology	Nitric acid production from technology i (tonnes)	Equation 3.6			N2O Emissions (kg)	N2O Emissions (Gg)
			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)		
	Ij	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

2006 IPCC Guidelines

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\PPU SPEC\7 TESTING 282\Database_backup_282_IPPU_September.accd)

Example of a worksheet

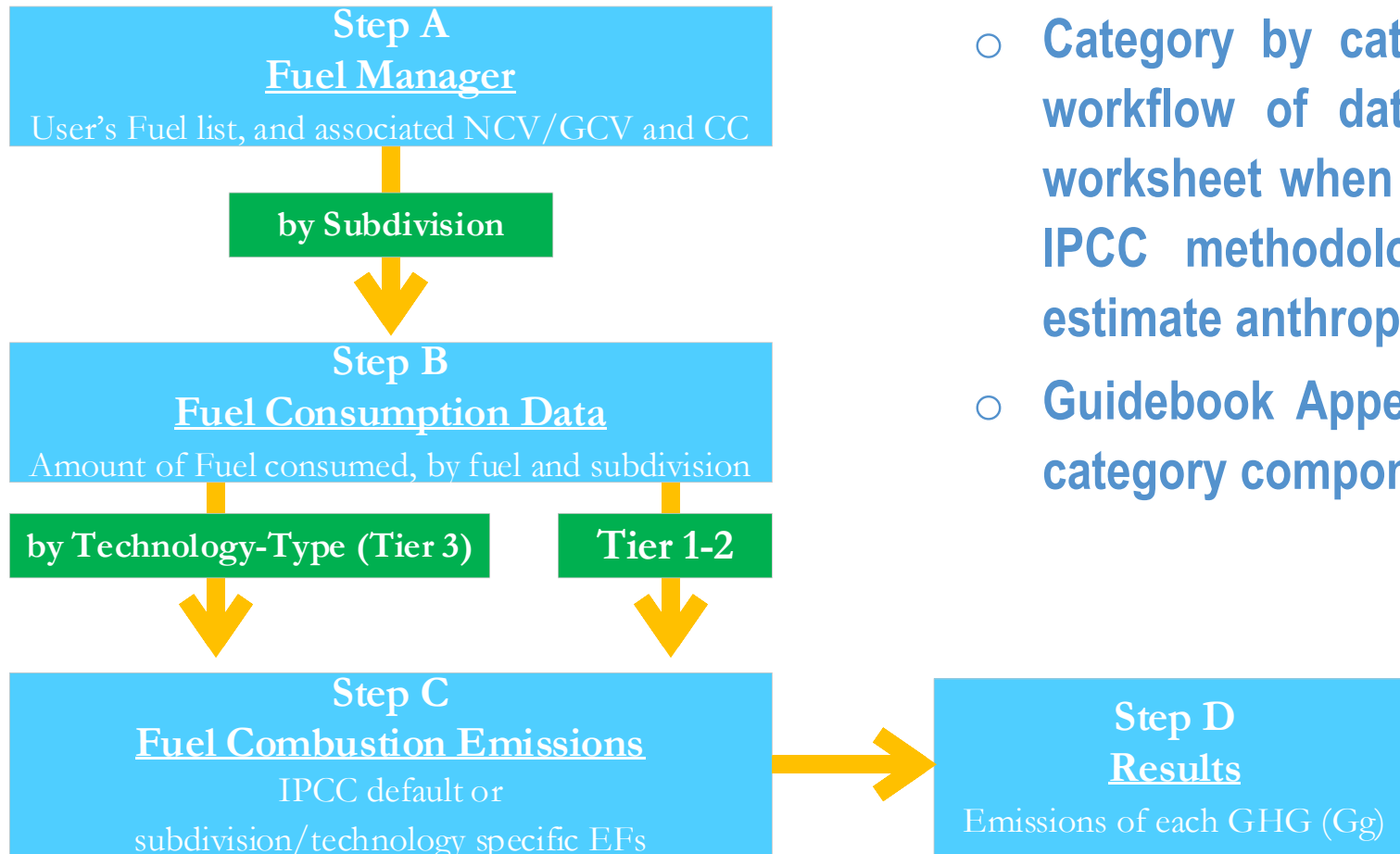
Ongoing work

- **Paris Agreement requirements**
 - Indirect CO₂ emissions
 - (memo item) Indirect N₂O emissions
 - Interoperability with UNFCCC reporting tool for Common Reporting Tables (*Decision 5/CMA.3*)
- **Other**
 - Notation Keys
 - Time series export/import
 - Supporting tools

Guidebook - Scope

- Guide to estimate anthropogenic GHG emissions and removals from each inventory category by implementing all methodological Tiers & Approaches according to the *2006 IPCC Guidelines* and its *Wetlands Supplement* with elements of the *2019 Refinement*.
- Software users must be familiar with the IPCC methodologies and read the *Software Manual* (downloadable from the “Help” menu) before going through the Guidebook.
- ✓ ***The Guidebook does not replace guidance provided in the IPCC Methodology Reports***

Guidebook - Structure



- Category by category, the Guidebook shows the workflow of data input and calculation in each worksheet when implementing any of the available IPCC methodological Tiers and Approaches to estimate anthropogenic GHG emissions/removals
- Guidebook Appendices describe the use of multi-category components (e.g., Fuel manager)

Download

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

Task Force on National Greenhouse Gas Inventories

ipcc
INTERGOVERNMENTAL PANEL ON climate change
WMO UNEP
IPCC web sites

Inventory Software

New Version 2.861 – IPCC Inventory Software

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](#).

- Ver. 2.861 IPCC Inventory Software - 64bit
- Ver. 2.861 IPCC Inventory Software - 32bit

If you find any issues in the use of the IPCC Inventory Software, come back to us at ipcc-software@iges.or.jp.

Thank you very much for your support.

Getting started with the IPCC Inventory Software

After installing the IPCC Inventory Software, launch it for the first time and you will be asked to initialize the associated database by providing YOUR Login (User Name) and YOUR Password.

IPCC 2006

Welcome to 2006 IPCC Software for National Greenhouse Gas Inventories

The application is being run for the first time.

It is necessary to define superuser. Superuser has full control over database and application and is responsible for defining and managing additional users working with this instance of application.

Please, supply superuser login name and password in the textboxes

Login:

Password:

Confirm Password:

Password hint:

OK Cancel

- Version 2.861 of the IPCC Inventory Software comes with two alternative installation packages: 32 bit vs. 64bit.
- Please support by using it and reporting any findings to: ipcc-software@iges.or.jp

Support

- IPCC TFI TSU is supporting the IPCC Inventory Software:
 - User Manual
 - Help Desk: ipcc-software@iges.or.jp
 - Pool of voluntary testers, *to support software development and use*
 - Cooperation with the UNFCCC at training workshops on the use of the IPCC Inventory Software
 - Annual IPCC meetings on feedback from software users, *including issues where support is needed or software improvements are envisaged*
- ✓ *In the 7th IPCC assessment cycle (from end of July 2023) the plan and support may be subject to changes, depending on consideration by the IPCC and the new Bureau of the Task Force on National Greenhouse Gas Inventories*



Thank you

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

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INTERGOVERNMENTAL PANEL ON climate change

