

**United Nations** Climate Change

## Hands-on Training ETF GHG Inventory Reporting Tool

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## Agenda

- Introduction
  - Reporting requirements under the Paris Agreement
  - Common Reporting Tables (CRT)
  - Development of the ETF Reporting Tools
- Hands-on Training on ETF GHG Inventory Reporting Tool
- Interoperability with IPCC Software
- Participants' interaction and question/answers
- Future implementation

## https://unfccc.int/documents/632417



Scan the QR code for exercise guide



## Session background and objectives

#### Training session

- ETF GHG Inventory Reporting Tool for common reporting tables (CRT) for the electronic reporting of the information in the national inventory reports of anthropogenic emissions by sources and removals by sinks of greenhouse gases
- Hands-on training session to provide a practical experience of the use of the tool and its features

At the end of the training session, the participants will be able to:

- ✓ Access to the ETF Reporting Tools
- ✓ Get familiar with the user interface
- ✓ Create a new inventory version
- ✓ Specify/Edit version settings
- ✓ View and access all inventory versions
- ✓ Customize the categories to report
- ✓ Add and modify data in the application
- ✓ Export/import of data entry grids in Excel
- ✓ Working with Comments and NK explanation
- ✓ Generate/download common reporting tables
- Work with JSON and interoperability with IPCC Software

#### Objective

#### Background



## Introduction



**United Nations** Climate Change

## **Reporting requirement for GHG Inventories under Paris Agreement**

#### **Article 13 of the Paris Agreement**

#### National inventory report (NIR) of GHG emissions

7. Each Party shall regularly provide the following information:

(a) A **national inventory report** of anthropogenic emissions by sources and removals by sinks of greenhouse gases, prepared using good practice methodologies accepted by the Intergovernmental Panel on Climate Change and agreed upon by the Conference of the Parties serving as the meeting of the Parties to this Agreement;

#### Decision 18/CMA.1, Annex, Chapter II

#### National inventory document (NID) and Common reporting tables (CRT)

38. Pursuant to Article 13, paragraph 7(a), of the Paris Agreement, **each Party shall** provide a **national inventory report** of anthropogenic emissions by sources and removals by sinks of GHGs. The national inventory report consists of a **national inventory document** and the **common reporting tables**. Each Party shall report the information referred to in paragraphs 39–46 below, recognizing the associated flexibilities provided for those developing country Parties that need them in the light of their capacities.

#### **Decision 5/CMA.3**

1. Adopts:



(a) The **common reporting tables** referred to in chapter II of the annex to decision 18/CMA.1 for the electronic reporting of the information in the national inventory reports of anthropogenic emissions by sources and removals by sinks of greenhouse gases, as contained in annex I;

## **Common Reporting Tables (CRT)**

- Prepared for the electronic reporting of information in the NIR of anthropogenic emissions by sources and removals sinks of GHGs
- Set of MS Excel workbook (containing 60 worksheets) for each reported year
- There are three types of tables for each year
  - Sectoral Background Tables (white/orange cells) Need to fill data at this layer
  - Sectoral Report Tables (green cells) Automatically generated
  - Summary Tables/Cross-sectoral Tables (blue cells) Automatically generated



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#### Sectoral Report Tables

#### Summary / Cross-sectoral / Trends Tables

## **CRT structure**

1. Energy	2. IPPU	3. Agriculture	4. LULUCF	5. Waste	
Sectoral background tables	Sectoral background tables	Sectoral background tables	Sectoral background tables	Sectoral background tables	
Table1.A(a)s1 Table1.A(a)s2 Table1.A(a)s3 Table1.A(a)s4 Table1.A(b) Table1.A(c) Table1.A(d) Table1.B.1 Table1.B.2 Table1.C Table1.D	Table2(I).A-H Table2(II).B-Hs1 Table2(II).B-Hs2	Table3.A Table3.B(a) Table3.B(b) Table3.C Table3.D Table3.E Table3.F Table3.G-J	Table4.1 Table4.A Table4.B Table4.C Table4.D Table4.E Table4.F Table4(I) Table4(II) Table4(III) Table4(IV) Table4.Gs1 Table4.Gs2	Table5.A Table5.B Table5.C Table5.D	Level 3
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Sectoral report table	Sectoral report table	Sectoral report table	Sectoral report table	Sectoral report table	
Table1	Table2(I) Table2(II)	Table3	Table4	Table5	Level 2
•	-			•	
Summary	tables	Cross-cutting tables	Trend tables		
Summary1 Summary2 Summary3 Climate Change		Table6 Table7 Table8s1 Table8s2 Table9 Flex_Summary	Table10s1 Table10s2 Table10s3 Table10s4 Table10s5 Table10s6		Level 1

### **CRT worksheets**



## **GHG** inventory workflow





## **Common Reporting Tables and Data entry grids**

Data entry grids have categories for all sectors arranged in navigation tree and allows to enter data for the whole time series for a selected category. The data from the data entry grids are mapped to the CRTs on an annual basis when you generate/download the reporting tables.





## Hands-on Training



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## Housekeeping rules for the training

- 1. For this training session, access is provided to the training version of the GHG Inventory Reporting tool.
- 2. The secretariat will demonstrate the features of the GHGI Reporting tool. **During the demonstration**, please refrain from using the tool.
- 3. Please start working on the exercise only when you are asked to do so. Sufficient time will be allotted to perform exercises.
- 4. Please feel free to ask questions while performing the exercises.
- 5. Please **DO NOT** use the training version of the ETF Reporting Tools to begin your GHG inventory submission.





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## Use of icons in the presentation

1

This icon denotes that the box contains useful information.



This icon signifies that there will be a hands-on exercise on a particular feature of the GHG Inventory Reporting Tool. Each exercise is associated with a number. e.g.,



The slide with this icon is for information. The feature will be demonstrated during the training, but there will not be any corresponding exercise.





## Go to the web link



Scan the QR code for exercise guide

## https://etf-ghg-training.unfccc.int

Enter your email address (registered for this training) and click on Next

Click on Send Code

Check your email for the verification code

In the log-in window, enter the code and click on Sign-in



## List of exercise for the training

- Exercise 1: Creating an inventory version and specifying version settings
- Exercise 2: Customizing navigation tree (categories for reporting)
- **Exercise 3**: Data entry (manual data entry)
- **Exercise 4**: Data entry (Excel export/import)
- Exercise 5: Editing version setting(s)
- Exercise 6: Working with comments, NK explanations
- **Exercise 7**: Generation/download of reporting tables
- Exercise 8: Working with JSON and interoperability with IPCC Software





## **ETF Reporting Tools login**

Weblink to access the ETF Reporting Tools <u>https://etf-ghg-training.unfccc.int</u>

□ Login in details

Username: [Email address (registered for this training)]

Follow on-screen instruction to get the code in your email





United Nations *III UNFCCC will provide username and password if you do not have one yet. It can be only used during the training.III* 

## Creating an inventory and version settings (1/2)

- 1. Click "Enter" on the "ETF | GHG INVENTORY Reporting tool" tile.
- 2. Click on "Start" in the "Create blank inventory" tile.

#### If you are in the "Data entry" tab

- 1. Click on the "Inventories" tab
- 2. Click on **"+ Create version"** and follow the steps above.
- 3. Select "**Year**" for which you want to submit the inventory.
- 4. Toggle on "**Default version**" to make this the default working version for all users within your Party.
- 5. Click "Create Inventory >"



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© ETF   GHG INVENTORY	Inventories	1	Data entry	1	Reporting tables	]	QA/QC		ዳ
Version:	© DEFAULT					_		• 0	Inine
Inventories						~			
The list below contains all inventory versions	and their stati	IS.				1	+ Cr	eate Versi	ion



## Creating an inventory and version settings (2/2)

- 1. Select "**No**" if your Party does not want to apply flexibility provisions.
- 2. Select "**Yes**" if your Party wants to apply flexibility provisions, and you can select the specific flexibility provisions.
- 3. Click on "Next" until you complete all version settings
- 4. At the end of version settings, you can enter the "Data entry" page

Flexibility provisions	1 Flexibility provisions
	Please specify if any flexibility provisions in light of national capacities will be used.
ergy	💽 Yes 🚫 No
PU	Note: Notation key 'FX'' can only be used in data entry when flexibility provisions are used.
griculture	2 Select the specific flexibility provisions to be used
ULUCE	Para 58 (Enables to set the last reporting year as submission year minus 3 in the time-series)
LULUCH	The last reporting year in the time series is: Y 2022
	Para 57 (Allows to select the reporting years in the time-series including the NDC reference vent/period, if applicable) ③
	Specify NDC reference year/period*
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	2003
	Select the reporting years in the time-series*
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	Para 48 (Reporting HFCs, PFCs, SF6 and NF3)
	Enabling this option will allow to apply flexibility for the selected E-pas(es)

**E1** 





## **Flexibility provisions**

-

L	Flexibility provisions (Annex to decision 18/CMA.1)	Flexibility provisions for those developing country Parties that need it in the light of their capacities.
	<b>Para. 25</b> (Key category analysis)	Identify key categories using a threshold no lower than 85 per cent (instead of 95 per cent)
	<b>Para. 29</b> (Uncertainty assessment)	Provide qualitative discussion of uncertainty for key categories both latest inventory year/ trend, instead of quantitatively estimating and qualitatively discussing uncertainty for all categories for at least the starting year and the latest reporting year and the trend.
	<b>Para. 32</b> (Insignificance threshold)	Consider emissions insignificant if the likely level of emissions is below 0.1 per cent of total GHG emissions, excluding LULUCF, or 1,000 kt CO2 eq, whichever lower (as opposed to 0.05 per cent or 500 kt CO2 eq). Total emissions for all gases from categories considered insignificant shall remain below 0.2 % total GHG emissions, excluding LULUCF, as opposed to 0.1 per cent.
	<b>Para. 34</b> (QA/QC plan)	Encouraged to elaborate an inventory QA/QC plan including information on the inventory agency responsible for implementing QA/QC (as opposed to a requirement to develop a QA/QC plan).
	<b>Para. 35</b> (QC procedures)	Encouraged to implement and provide information on general inventory QC procedures in accordance with their QA/QC plan (as opposed to required to implement and provide information).
	<b>Para. 48</b> (Reporting F-gases)	Report at least 3 gases (CO2, CH4, and N2O). Also, any of the 4 gases (HFCs, PFCs, SF6, and NF3) included in NDC under Art. 4 or that are covered by activity under Article 6 or have been previously reported (as opposed to reporting all 7 gases)
	<b>Para. 57</b> (Annual time series years)	Report data covering the reference year/period for the NDC and, in addition, a consistent annual time series from at least 2020 onward (as opposed to reporting a continuous time series from 1990 onwards).
	<b>Para. 58</b> (Last year in time series)	The latest reporting year shall be no more than 3 years prior to submission of the inventory (as opposed to no more than 2 years for all other Parties)

## **Exercise: Creating version and specifying version settings**

#### **Exercise 1a:**

- Login to the application using the weblink: <u>https://etf-ghg-training.unfccc.int</u>
- Create a new inventory version for the submission year 2025
- Select "Yes" to apply flexibility provisions
- Select para 58 flexibility provisions
- Select para 57 flexibility provisions and select "Do not specify NDC reference year" and select 1990, 2000, and 2010

#### **Exercise 1b:**

- Go through the version settings for Energy and IPPU, and do not select any settings (Toggle off)
- Go to the version setting for the Agriculture sector
- Select "Option B (country-specific)" for the cattle categorization
- Select "Approach C" in the LULUCF sector
- Click on "Go to data entry"



Scan the QR code for exercise guide



## **User Interface of GHG Inventory Reporting Tool**

- Inventories To start a new inventory and to configure the properties relating to the inventory, such as submission year, sectors, options and years to be included in the inventory
- Data entry For entering and/or editing data in the data entry grids
- □ **Reporting tables** For viewing reporting tables in Excel, in the format of the agreed CRT, for a particular year
- QA/QC Placeholder for various types of QA/QC (not implemented yet)
- Version Unique name of the version you are working on (ISO code, Tool, Submission year, version number)
- Status State of the inventory (e.g., Initiated, Started, QA/QC, Approved, Submitted)
- Default Flag to indicate the common version that all users within a Party are working
- Data synchronized Shows the status of data synchronization
- > **Online** Indication if the user is Online or Offline
- Navigation tree CRT category tree as agreed in Annex I to decision 5/CMA.3



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1.A.1.	b. Petroleum refining > Lio	quid fuels			Data entry grids
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### **Customizing navigation tree – Adding country-specific category**

- Click on the "Data entry" tab. 1.
- 2. Click on ">" to expand the tree node (category) and "v" to collapse the tree node.
- Click on "+" sign next to the category name to add a sub-category 3.
- Select an item from a dropdown list where the predefined sub-category is available 4.
- 5. OR Enter a country-specific category where the node name says "please specify"

Navigation tree     Option	ons	Navigation tree : Options	1.A.2.g.viii. Other (please specify)		
	1.A.1.a.iii. Heat plants	✓ 1.A.2. Manufacturing industries and construction	Expand all & Autofull with "NA" @ Show/hide years		
Sector /Totals	Expand all	<ul> <li>1.A.2.a. Iron and steel</li> <li>1.A.2.b. Non-ferrous metals</li> <li>1.A.2.c. Chemicals</li> </ul>	Description         Unit         1990           01         V         Fuel consumption		
✓ 1.A. Fuel combustion activities (sectoral approach)	ID Description	> 1.A.2.d. Pulp, paper and print	02 Cultura ruess 03 Solid fuels		
✓ 1.A.1. Energy industries	01 V Fuel consumption	> 1.4.2.e. Food processing, beverages and tobacco > 1.4.2.6 How metallia minoral.	04     Gaseous ruels       05     Other fossil fuels		
✓ 1.A.1.a. Public electricity and heat production	+ 02 - Liquid fuels	v 1.A2.g. Other	06 Peat 07 LBiomass		
> 1.A.1.a.i. Electricity generation	Add child node	child node			
> 1.A.1.a.iii. Heat plants	1.A.1.a.i. Electricity generation	> 1.A.3. Transport > 1 A.4. Other sectors Add new	node		
> 1.A.1.b. Petroleum refining	1.A.1.a.ii. Combined heat and power	> 1.A.5. Other (not specified elsewhere)			
1.A.1.c. Manufacture of solid fuels and other energy industries	generation     I.A.1.a.iii. Heat plants	generation     > Information Item       1.A.1.a.iii. Heat plants     > 1.A(b). CO. from fuel combustion activities (reference approach)			
> 1.A.2. Manufacturing industries and construction		> 1.A(c). Comparison of CO <sub>2</sub> emissions from fuer combustion	15 V Method		
United Nations	Adding pre-defined sub-category		Adding country specific category		



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Adding country specific category

# 

## Customizing navigation tree – Editing/deleting country-specific category

#### Editing user-specified category

- 1. Click on the added category and click on the pen icon to edit the child node name
- 2. Rename the child node and Click 'Save name' to confirm rename.

#### **Deleting country-specific category**

- 1. Click on the added category and click on the bin icon to delete the child node.
- 2. Click "Delete" to confirm the deletion.

#### Note: Only the node/category that you have added can be deleted.

#### !!! Deletion of the node also deletes all data added for that category. !!!

Navigation tree	: Options	1.A.2.g.viii. Other (please sp	ecify) > Test 1
✓ 1.A.2.g. Other	+	Expand all	
✓ 1.A.2.g.vlii. Other (please sp	ech + 🔟	Description	Unit
L 🗸 Test 1	0	01 V Fuel consumption	
⊢ Liquid fuels ⊢ Solid fuels ⊢ Gaseous fuels ⊢ Other fossil fuels.	Edit node Entername Test 3		×
⊢ Peat ⊏ Biomass		Cancel	Save name





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## **Exercise: Customizing navigation tree (categories for reporting)**

#### **Exercise 2a:**

• Find child node "1.A.4.c.iii. Fishing > Gasoline" in the navigation tree

#### **Exercise 2b:**

 Add user-specified node "5.A.2. Unmanaged waste disposal sites > Less decomposable wastes"

#### **Exercise 2c:**

- Add user-specified node "3.A.1.A.iv. Other (please specify) > Famous cow" and "3.A.1.A.iv. Other (please specify) > Sad cow"
- Rename "Sad cow" to "Happy cow"

#### **Exercise 2d:**

Delete user-specified node "3.A.1.A.iv. Other (please specify) > Famous cow"



Scan the QR code for exercise guide



## **Data entry in GHG Inventory Reporting Tool**

□ Three ways of data entry

- ✓ Manual input into the data entry grids
- ✓ Partial or full import of data using MS Excel
- ✓ Bulk import of data using JSON
  - For connecting with the national system
  - For importing data from IPCC Software

Data are saved automatically in the database in real-time

Copy and paste including drag and drop of data in data entry grids

Automatic data entry validation

- ✓ Either a number or a notation key (NO, NA, IE, NE, C, FX)
- $\checkmark$  The notation keys entered in a year propagate to the subsequent years
- ✓ Number to be separated by a dot (".") to signify a decimal point
- ✓ Number should be between 0 and 1 where fractions are required
- $\checkmark$  Number should be between 0 and 100 where the information required is in %
- ✓ Text can be entered as needed to report e.g., AD description (in 1.B.2)





## **Manual data input**

Manual data entry can be done in the data entry grids of each category in the navigation tree. Color codes are used in the data entry grids:

- White The user can enter data
- Green Data are automatically calculated by the application
- Brown Formula in these cells are overwritten with user-entered data
- Blue Value cross-referenced
- Grey No input necessary
- Dropdown Data can be selected from the dropdown list
- 1. Click on the "Data Entry" tab.
- 2. Navigate to a node (category) in the tree by using the ">" sign.
- 3. Click on the node (category) to display the data entry grid.
- 4. In the data entry grid, provide the required information in the corresponding cells (for one year), such as AD and emissions.

Values in green cells with formulas, e.g., implied emission factor, are automatically calculated.

Navigation tree     1 Options	(1.A.1	.b. Petroleum refining >	Liquid fuels	)				
Sectors/Totals	0	Dpendali					Show/hide years	(2) Export
<.1. Energy	-	Description	Ame.	1990	1001	1902	1993	1924
LA Fuel combustion activities (sectoral approach)	91	Fuel consumption	T	123455.00				
1.A.1, Energy industries	02	Calorific value		NCV V		~		
> 1.A.1.a.Public electricity and heat production +	03	✓ Method						
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4. Biomasa	85	V Emissions						
1.4.1 c. Manufacture of solid fuels and other energy industries $+$	12	002	kt	4,321.00				
> 1.A.2. Manufacturing industries and construction	13	CH	kt	\$2.09				
> 1.A.S.Transport	14	L N <sub>i</sub> O	bit.	1.42				
> 1.A.4. Other sectors	15	<ul> <li>Amount captured</li> </ul>						
> 1.6.6 Other Inct specified elsewhere)	16	Loo,	1.1	NO	NO	NO	NO	1
3. Information Name	17	<ul> <li>Implied emission factor</li> </ul>						
· Homadonen	58	co2	1/L/	35,00	80	NO	NO	
3 1 A(b), CO <sub>3</sub> from tue compusador activitate (reference approach)	19	014	kg/TJ	428.41				
> 1 A(c). Comparison of GO <sub>3</sub> emissions from fuel combustion	20	L NIO	kg/T3	11.56				
> 1 A(d). Feedstocks, reductants and other non-energy use of Tuels	21	Documentation box		Hello Wor_	۲		9 C	•
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2. Industrial processes and product use	P	Commenta			E Featnotas			



## **Disabling automatic aggregation**

- The GHGI-RT automatically aggregates the data from the sub-categories to the sector and then to the national totals. It is possible to disable automatic aggregation in the following cases:
- Disaggregated data is not available
- Emission data reported for at least one direct subcategory is the notation key 'C' (confidential) or 'FX' (flexibility)

#### Disaggregated data not available

- 1. Click on the "Data Entry" tab.
- 2. Select a category that do not have information on subcategories level.
- 3. Do not add any subcategories for that category.
- 4. Enter the data in the green cells (i.e., overwriting formulas).
- 5. Entering data in green cells is only possible when the category to which the grid with green cells belongs does not have any subcategories.
- 6. Once the green cells are overwritten, the shading on the cells becomes brown, making it easy for users to identify the cells where formulas have been overwritten.

Version: XYZ-CRT-2024-VD.84 Status: 💪 Started							🕝 Data s	ynchronized   •				
Navigation tree     i Options		1.A.1.c. Manufacture of solid fuels and other energy industries										
Sectors/Totals	C Expend all © Show/Nide years & Expor											
<ol> <li>Energy</li> </ol>	-	Description	Unit	1990	1991	1992	1993	1994				
<ul> <li>1.A. Fuel combustion activities (sectoral approach)</li> </ul>	01	V Fuel consumption	τJ	5,667.87	589.58	8,953.48	NA,NE,NO	NA.NE,NO				
✓ 1.A.1. Energy industries	02	- Liquid fuels	TJ 📜	5,432.89			10032015425421.13					
> 1.A.1.a. Public electricity and heat production +	03	- Solid fuels	TJ .	234.98								
> 1.A.1.b. Petroleum refining	04	- Gaseous fuels	TJ 🚦	NO	NO	NO	NO	NO				
1.A.1.c. Manufacture of solid fuels and other energy industries +	05	- Other fossil fuels	τJ	NE	NE	NE	NE	NE				
> 1.A.2. Manufacturing industries and construction	06	Peat	TJ 🕻	NA	NA	NA	NA	NA				
No categories	07	L Biomass	τJ	с	C	c ;	C	c				
added	08	Salorific value		NCV	NCV	NCV	NCV	NCV				
> 1.A.4. Other sectors	09	Liquid fuels		NCV 😒	NCV 👽	NCV 🗸	NCV 🗸	NCV 🗸				
> 1.A.5. Other (not specified elsewhere)	10	Solid fuels		~	~	~	×	~				
> Information item	11	Gaseous fuels		~	~		~	~				

#### **Reporting confidential information**

- 1. Click on the "Data Entry" tab.
- 2. Select a category which have direct subcategories.
- 3. In one of the subcategory, enter the notation key 'C' (confidential) for emissions.
- 4. In this case, the aggregation formula in the parent category becomes editable and can be overwritten.
- 5. Enter the aggregated value in the parent node overwriting the formula.



## **Exercise: Manual data entry (directly in the tool)**

#### **Exercise 3a:**

- Go to "1.A.1.b. Petroleum refining > Liquid fuels"
- Fill fuel consumption for several years
- Fill calorific value (choose from the list) and apply subsequent years
- Fill "NO" for  $CH_4$  emissions in the first reporting year.
- Fill numeric values for  $CO_2$  and  $N_2O$

#### **Exercise 3b:**

United Nations Climate Change

- Go to "1.A.1.b. Petroleum refining > Solid fuels"
- Do similar things for this node as in exercise 3a.
- Go to "1.A.1.b. Petroleum refining" and check the aggregation



Scan the QR code for exercise guide



## Excel data input – Exporting Excel tables for data entry

E4

This method allows downloading data entry grids in Excel format and work offline. It assists users to either check data entered in the software, or to enter/edit data and re-import it into the application. Export of data entry grids can be done for a sub-category, sector, or for the entire inventory.

#### Exporting excel data entry grids

- 1. Click on category that you want to export.
- 2. Click on "Export" and then on "Current grid as .xlsx" to export the single selected grid or "Current sector/subsector as .xlsx" to export the selected category and all sub-categories below the selected category.
- 3. The file will be exported to your local computer.
- 4. You can also export all data entry grids in excel. Click "Options" then "Export all data entry grids as .xlsx".

Navigation tree : Options	1.A.1	I.b. Petroleum refining				Navigation tree	ions 1.A.1.	b. Petroleum refinin
sectors/Totals		Expand all			Show/hide years     Export     Expo	Sectors/Totals	Edit navigation tree	
✓ 1. Energy		Description	Unit	1990	Current grid as .xlsx	✓ 1. Energy ③ S	Show completenes	s check
<ul> <li>1.A. Fuel combustion activities (sectoral approach)</li> </ul>	01	✓ Fuel consumption	TJ	123,456.00	Current grid and its sub-grids as .xlsx	✓ 1.A. Fuel combustion activities (sectoral approa) <sup>③</sup> S	Show translation	ation
<ul> <li>1.A.1. Energy industries</li> </ul>	02	- Liquid fuels	TJ	123,456.00		V 1.A.1. Energy industries	mport .xlsx file	
> 1.A.1.a. Public electricity and heat production +	03	- Solid fuels	LΤ			> 1.A.1.a. Public electricity and heat product	Export all data entry	y grids as .xlsx
✓ 1.A.1.b. Petroleum refining	04	- Gaseous fuels	J			V 1.A.1.b. Petroleum refining	Export all data entry	y grids as .json <sub>els</sub>
F Liquid fuels	05	Other fossil fuels	TJ			F Liquid fuels	05	- Other fossil fuels
- Solid fuels	06	- Peat	τJ			L Solid fuels	06	Peat
- Gaseous fuels	07	L Biomass	TJ				07	L Biomass
L Other fossil fuels	08	✓ Calorific value		NCV		+ Gaseous ruers	08	✓ Calorific value





The color scheme of the excel data entry grid follows the same color scheme as in the web interface. The excel file should not be modified to add/delete rows or columns or to enter data in the cells other than the specified cells.

#### Entering data in Excel data entry grids

- 1. Open the Excel data entry grid file exported from the GHG Inventory reporting tool.
- 2. Enter the data in the white cells for activity data and emissions.
- 3. The implied emission factor (green cells) is not calculated in the Excel file, but it will be calculated upon importing it into the GHG Inventory reporting tool.
- 4. Save the Excel file after entering the data for importing to the GHG Inventory reporting tool.

	A	B	С	D	E	F	G	H	I	J	K
1	TEST			XYZ-CRT-2024	-V0.84	Exported on:	2024-04-17	L3:58:29 (UTC	+2)		
2	Sector	s/Totals > 1. Energy > 1.A. Fuel con	nbustion a	ctivities (secto	ral approach	n) > 1.A.1. Ene	ergy industri	es > 1.A.1.b. F	Petroleum ref	fining > Liquid f	uels
3											
4	ID	Description	Unit	1990	1991	1992	1993	1994	1995	1996	1997
5	01	Fuel consumption	LT	123,456.00	123789.00						
6	02	Calorific value		NCV	NCV						
7	03	Method									
8	04	CO2		D							
9	05	CH₄		T1,T2							
10	06	N <sub>2</sub> O		T2							
11	07	Emission factor information									
12	08	CO2		D							
13	09	CH₄		CS							
14	10	N <sub>2</sub> O		OTH							
15	11	Emissions									
16	12	CO2	kt	4,321.00	5432.00						
17	13	CH₄	kt	65.40	68.00						
18	14	N₂O	kt	8.70	23.00						
19	15	Amount captured									
20	16	CO2	kt	NO	-2.50	NO	NO	NO	NO	NO	NO
21	17	Implied emission factor									
22	18	CO2	t/TJ	35.00	NO	NO	NO	NO	NO	NO	NO
23	19	CH₄	kg/TJ	529.74							
24	20	N <sub>2</sub> O	kg/TJ	70.47							
25	21	Documentation box		F	Iello again!						
26											
	<	1.A.1.b.Petroleum refining	( 1.A.1.b	. Liquid fuels	)1.A.1.b. S	olid fuels	1.A.1.b. Gas	seous fuels	1.A.1.b. Oth	ner fossil fuels	1.A.1.b. Peat



## Excel data input – Importing Excel tables into the tool

The Excel data import function will only work with Excel files for data entry grids exported from the GHGI Reporting Tool. The user should first export the file from the software in order to import an Excel file with the data. It is imperative that the format and structure of the Excel file exported are not changed.

#### Importing excel data entry grids

- 1. Click "Options" and then click "Import .xlsx file".
- 2. Click on the "**Select**" and select the appropriate Excel file to be imported. You can also drag and drop the file in import window.
- 3. Click on "**Import**" button. This will initiate the data import process, which includes automatic input of data, and recalculation of values in cells with formulas.
- 4. You can check the generated log file for the detail of the import.





## **Exercise: Data entry with Excel export / import**

#### **Exercise 4:**

- For the category "1.A.1.b. Petroleum refining", export "Current sector/subsector as .xlsx".
- Open the exported Excel file (from your download folder)
- Add some numerical values/notation keys in the exported Excel file for the fuels in the fuel-specific worksheet.
- Add invalid notation key 'PK' for CH<sub>4</sub> in the exported Excel file.
- Save the exported Excel file
- Import the Excel file to the GHGI reporting tool
- Check that the data that you have entered in the Excel are imported into the tool.



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## **Version settings for inventory**

Settings		Explanation					
Flexibility provisions	Application of flexibility provision	Option to apply flexibility for those developing country Parties that need it in the light of their capacities. The notation key 'FX' can be used in data entry only when flexibility provisions are used					
	Para 58 (Last year in time series)	Set the last reporting year as the submission year minus 3 in the annual time series.					
	Para 57 (Annual time series)	Select the reporting years in the annual time series, including the NDC reference year/period, if applicable.					
	Para 48 (Reporting F-gases)	Select F-gas (HFCs, PFCs, SF6 and NF3) for reporting.					
Energy	Specify calorific value	Auto-fill the selected calorific values for all fuels in sub-categories of 1.A.					
	Fuel(s) Not Occurring	Auto-fill the notation key 'NO' in the data entry grids for the selected fuel(s) in all sub-categories of 1.A.					
IPPU	F-Gas(es) Not Occurring	Auto-fill the notation key 'NO' in the data entry grids for the selected species of F-Gas(es).					
	Bulk addition of F-Gases species	Bulk add the selected F-gas(es) as child nodes in all sub-categories of 2.B, 2.C, 2.E, 2.F, 2.G and 2.H.					
Agriculture	Cattle categorization	Select the options (Option A or Option B) for cattle categorization					
LULUCF	Approach for HWP	Specify the approach (Approach A, Approach B and Approach C) for the harvested wood products reporting					
	Additional years for HWP activity data	Select additional year(s) for reporting HWP activity data					
	Reporting information in Table4(II)	Select the option to report the information in the aggregated or disaggregated way					



## **Editing version setting**

You can go back to the edit version setting in your inventory to change the parameters you want to report or add/edit flexibility provisions. This will only affect the version that you are editing.

- 1. Go to the Inventories tab,
- 2. Identify the inventory for which you want to edit the version setting and click on the gear icon.
- 3. Navigate to the section for which you want to edit the version setting
- 4. Edit the settings you want to change.
- 5. Click on "Next" for additional settings or click "Go to data entry"





## **Exercise: Editing version setting**

#### **Exercise 5:**

- Go to the Inventories tab and identify the version you are working.
- Go to the edit version setting of that inventory.
- Select the toggle ON for flexibility provision on Para 48 (Reporting HFCs, PFCs, SF6, and NF3).
- Select SF6 to apply flexibility and Click Next to go to the IPPU version setting.
- Select the toggle ON to specify SF6 to be added as child nodes.
- Click on Go to data entry grids
- Go to 2.G.1 and check if SF6 has been added as child nodes and is populated with 'FX'



Scan the QR code for exercise guide





## **Comments, NK explanation, Documentation box, Footnotes**

Туре		Definition
Cell comments	Official comment	Official comment at the cell level of data entry. This will be reflected in the respective reporting tables of the official GHG inventory submission.
	Party comment	A comment entered by a user that they would like to share with the other users within their Party. This will NOT be reflected in the official submission.
	User comment	A comment entered by a user is visible only to that user. Users can put reminders for themselves here. This will NOT be reflected in the official submission.
Notation key Explanation	NK category	Navigation tree path for the cell where the notation keys "IE" and "NE" are entered. Auto-populated by the application. This will be reflected in Table9.
	Allocation by Party	Textual information provided by the user explaining the rationale for using the notation key "IE" . This will be reflected in Table9.
	Allocation by IPCC	Textual information provided by the user explaining the rationale for using the notation key "IE" . This will be reflected in Table9.
	NK Explanation	Textual information provided by the user explaining the rationale for using the notation key "IE" or "NE". This will be reflected in Table9.
Documentatio	n Box	The last line in each data entry grid. This type of comment is year-specific and will, therefore, be reflected only in the documentation box section of the reporting table for the year where the comment was entered. Used for providing reference in the NID.
Footnotes		Static text based on the footnotes in the agreed reporting tables. The footnotes appear in the relevant applicable data entry grid.



## **Working with comments**



ACTIVITY DATA AND

OTHER RELATED

INFORMATION

Annual waste amoun

treated

18 <sup>(1)</sup> The CH<sub>4</sub> implied emission factor (IEF) is calculated on the basis of eross methane (CH<sub>4</sub>) emissions as follows IEF

(kt dm )

60.99

1104.33

(g/kg waste)

considered insignificant (details in NIR Annex 5)

2.83

CH, flared

0.14

0.02

(kt)

energy acovery

2 Biological Treatment of Solid Waste

GREENHOUSE GAS SOURCE AND

Human Waste and Johkasou slude

14 2 Anaerobic digestion at biogas facilitie

3 (Sheet 1 of 1)

9 1. Composting 10 Municipal solid waste

11 Other (please specify)

16 Other (clease specify

SINK CATEGORIES

- 1. Click on the "Data entry" tab, go to the data entry grids of the category for which you want to provide a comment, and select the white cell for which you want to insert a comment.
- 2. Click on the **Comments** tab at the bottom of the screen.
- 3. Select the type of comment you want to insert.
- 4. Enter the comment and save.
- 5. The comments tab and data entry cells with comments are indicated by a green sign at the top right of cell.







Comments	reflected	in	CRT

## Working with Notation keys "NE" and "IE"

Users can provide the notation keys explanation for the use of "NE" and "IE," which will be reflected in the reporting table Table9.

- 1. Click on the "Data entry" tab, go to the data entry grids of the category, and enter the notation key 'NE' or 'IE' for the emissions.
- 2. Click on the **Comments** tab at the bottom of the screen.
- 3. Select the type of explanation or the type of comment you want to insert.
- 4. Enter the explanations/comment and save.
- 5. The comments tab and data entry cells with comments are indicated by a green sign at the top right of cell.

E Navigation tree + miles	֥	1,A,2.a. Iron and steel > Gas	eous fuels						E Navigation tree 1 Aphan	1.4.2.	. iron a	and steel > Gase	cous fuels					1	TABLE	COMPLETENESS - INFORMATI	ON ON NOTATION KEYS	(C)	P		e
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Adding NK explanation for "NE" in the tool

Adding NK explanation for "IE" in the tool

Mapping of NK explanation in CRT Table9.



## **Exercise: Working with comments and NK explanation**

#### **Exercise 6:**

- Go to the 'Data Entry tab' of your inventory.
- Navigate to the data entry grids for 4. Land use, land-use change and forestry > 4.A. Forest land > 4(III).A. Direct & indirect N<sub>2</sub>O emissions from N mineralization/immobilization > 4(III).A.1. Forest land remaining forest land
- Identify the Direct and Indirect emissions for  $N_2O$  emissions
- Enter "NE" for Direct emissions ( $N_2O$ ) and "IE" for Indirect emissions ( $N_2O$ )
- Go to the comments tab and enter text in NK's explanation for the use of "NE"
- Enter text in 'Allocation by IPCC' 'Allocation by Party' and 'NKs explanation' for the use of "IE"
- Enter User comment for the selected cell.





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## **Viewing/download reporting tables**

- 1. Click on the "**Reporting tables**" tab.
- 2. Select "Years", "Sectors" and "Tables" to view/download the reporting tables.
- 3. Click "Apply filters". The reporting tables based on the selection above will be available for download.

ETF   GHG INVENT	ORY	Inventories	s   D	lata entry	Re	porting tal	les	QA/QC								٩
rsion: XYZ-CRT-2024-V0.84   Sta	atus: 💪 Started				-		X								•	Online
ommon reportin	n <b>g tables</b> ng tables.															
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TABLE 1.A(a) SECTORAL BACKGROUND DA	ATA FOR ENERGY								1994
Fuel combustion activities - sectoral approach									XYZ-CRT-2026-V0.25
(Sheet 1 of 4)									XYZ
Back to Index									
GREENHOUSE GAS SOURCE AND SINK CATEGORIES	AGGREGATE ACTIVIT	Y DATA	IMPLIET	EMISSION FACT	ORS	co 104	EMISSIONS	×o	AMOUNT CAPTURED
	(TJ)	NCV/GCV**	(eTJ)	(kg/l	(J)		<u>vn</u>	(kt)	002
I.A. Fuel combustion	629885	GCV				49265.1495	10.7949	2.10	-500
Liquid fuels	289135	GCV	67.51621042	36.26083035	5.522617462	19521 2995	10.48588	t.60	NA,NE,NO
Solid fuels	340670	GCV	88.77753599	0.90415945	1.489432589	29743.85	0.30902	0.51	-500
Gaseous fuels 100	NA,NE,NO	GCV	NA,NE,NO	NA,NE,NO	NA,NE,NO	NA,NE,NO	NA,NE,NO	NA,NE,NO	NA,NE,NO
Other fossil fuels (7)	NA.NE,NO	GCV	NA,NE,NO	NANENO	NA.NE,NO	NA,NE,NO	NA.NE,NO	NAJNEJNO	NA,NE.NO
Peat <sup>(0)</sup>	NA,NE,NO	GCV	NA,NE,NO	NANENO	NA,NE,NO	NA,NE,NO	NA,NE,NO	NA,NE,NO	NA,NE,NO
Biomass <sup>414</sup>	NA,NE,NO	GCV	NA,NE,NO	NANENO	NA,NE,NO	NA,NE,NO	NA.NE,NO	NA,NE,NO	NA,NE,NO
I.A.I. Energy industries	352470	GCV				32519.644	0.42802	0.53	-500
Liquid fuels	40000	GCV	69.39485	3	0.6	2775.794	0.12	0.024	NE
Solid fuels	312470	GCV	96.7896118	0.985758633	1.62385189	29743,85	0.30902	0.507405	~500
Gaseous fuels ""	NE	GCV	NE	NE	NE	NE	NE	NE	NE
Other fossil fuels <sup>(1)</sup>	NE	GCV	NE	NE	NE	NE	NE	NE	NE
Peat (*)	NE	GCV	NE	NE	NE	NE	NE	NE	NE
Biomass	NE	GCV	NE	NE	NE	NE	NE	NE	NE
I.A.I.a. Public electricity and heat production "	312770	GCV				29766.95	0.30892	0.507585	-500
Liquid fuels	300	GCV	77	1	0.6	27.1	0.0009	0.00018	NE
Solid fisely	312470	GCV	96,7896118	0.985758633	1.62385189	29743.85	0.30802	0.507405	-500
Gaseous fuels <sup>60</sup>	NE	GCV	NE	NE	NE	NE	NE	NE	NE
Other fossil fuels (1)	NE	GCV	NE	NE	NE	NE	NE	NE	NE
Peat <sup>(8)</sup>	NE	GCV	NE	NE	NE	NE	NE	NE	NE
Biomass <sup>en</sup>	NE	GCV	NE	NE	NE	NE	NE	NE	NE
1 A.1 5. Petroleum refining	39700	GCV				2752.694	0.1191	0.02382	NE
Liquid fuels	39700	OCV	69.33738035	3	0.6	2752.694	0.1191	0.02382	NE
Solid fuels	NE	GCV	NE	NE	NE	NE	NE	NE	NE
Gaseous fuels 100	NE	GCV	NE	NE	NE	NE	NE	NĒ	NE
Other fassil foels (*)	NE	GCV	NE	NE	NE	NE	NE	NE	NE
Peat <sup>(8)</sup>	NE	GCV	NE	NE	NE	NE	NE	NE	NE
Biomasa <sup>(1)</sup>	NE	GCV	NE	NE	NE	NE	NE	NE	NE
1.A.1.c. Manufacture of solid fuels and other energy industries	NE	GCV				NE	NE	NE	NE
Index Abbreviations and acronyms	Table1 Table1.A(a)s1	Table 1. A/ais2	Table 1, A/ais 1	Table 1. A(a)sd	Table 1, A/b)	Table 1 A/r	Tab (+)	141	

**E7** 



## Exercise: Downloading common reporting tables (CRT)

#### **Exercise 7:**

- Select a few years from the years dropdown (e.g., 1990 and 1995)
- Select the "Energy" sector or Select "Tables"
- Click "Apply filters"
- You will see the list of reporting tables for each year
- Download individual Excel files from the list or download them as zip file
- Open the Excel file
- Check if the data you entered in the reporting tool is reflected in the reporting tables



Scan the QR code for exercise guide



## JSON data input – Export/ Import JSON file

The JSON is the interoperability format used in the GHG Inventory Reporting Tool. It is used for integration with other UNFCCC systems as well as with national systems that follow the JSON schema provided to Parties.

#### **Exporting JSON file**

- 1. In the "Data Entry" tab, click "Options" and then click "Export all data entry grids .json".
- 2. The file will be exported to your local computer.
- 3. You can then modify data in the JSON file, or you can transfer the data into JSON file from your national system.

#### **Importing JSON file**

- 1. In the "Inventories" tab, click "Import .json file"
- 2. Click on the "Select" and select the appropriate JSON file to be imported. You can also drag and drop the file in import window.
- 3. Click on "**Import**" button. This will initiate the data import process.
- 4. You can check the generated log file for the detail of the import.



:et

Gaseous fuels

Other fossil fuels

Options

Edit Navigation Tree

Show translation

Import .xlsx file

Show completeness check

Export all data entry grids as .xlsx

Export all data entry grids as .json

04

05



Navigation tree

1.A. Fuel combustion activities (sectoral

1.A.1.b. Petroleum refining

> 1.A.1.a Public electricity and here

1.A.1 Energy industries

- Liquid fuels

Solid fuels

**Exporting JSON file** 

Sectors/Totals

Energy

**JSON Sample** "netalata ver": "1.18.2" "country": "XYZ", "data\_version": "XYZ-CRT-2026-V0.3", metadata\_type": "CNT" intry specific data": [ "variables": [] nodes": [ "uid": "44506cc2-9907-4443-a05f-63940d98ab68 "uid": "fi4d2d25-1057-4022-bi44-d38f26242058 "uid": "7d600ea7-0cd2-4812-a717-c054fb5892f "grids": []. "dimension instances": [] "data": ( "values": [ entory year": "1998" variable uid": "cbb4b5f6-5c97-4550-a52e-2c706bc15a2d alua": "type": "dropdown" "value": null age disabled": false variable uid": "9d576292-a091-4a1a-afaa-4d1b180e4237 value": "type": "dropdown" "value": mult agg disabled": false Variable uld": "0fd20ec7-7153-409e-b57f-0421b5978edc "type": "drondown" app disabled": fals



## Interoperability with IPCC Software (1/2)

E8

The interoperability with the IPCC Software allows the transfer of the data from the IPCC software to the GHG Inventory Reporting Tool. After estimating the national GHG inventory Parties can export the JSON data exchange file from IPCC software and import it to GHG inventory reporting tool. Please note the following for the interoperability:

- Generation and Export of JSON file is available in the IPCC software version 2.871 or later.
- □ In the test version, JSON import can be done at the sector level only.
- □ In the test version, JSON file generation has been implemented for all sectors except for the F-gases.

#### In the IPCC Software

- After compiling your GHG inventory, Click "Export/Import" > "Export" > "UNFCCC CRT"
- Click "Generate JSON" and a JSON file is generated.
- 3. Save the JSON file to your computer and it can now be imported to the GHG Inventory reporting tool.







## Interoperability with IPCC Software (2/2)

#### In the GHG Inventory reporting tool

- 1. In the "Inventories" tab, click "+ Create version"
- 2. Click "Select" in the "Upload a file" tile
- 3. Click "**Select**" and select the JSON file exported from the IPCC software. You can also drag and drop the file in drag and drop area.
- 4. Specify "Submission year", "Default version" and click "Create inventory". The inventory will be created.
- 5. Specify applicable version settings and click "Go to data entry" to start working on your inventory.
- 6. The data imported from the IPCC software will already be populated in the data entry grids.
- 7. You can modify the data, if needed.



## **Exercise: Interoperability with IPCC Software**

#### **Exercise 8:**

- Compiling your GHG inventory in the IPCC Software
- Click "Export/Import" > "Export" > "UNFCCC CRT" in the IPCC Software
- Click "Generate JSON," and a JSON file is generated and save the JSON file to your computer
- Enter the GHG Inventory Reporting Tool
- In the "Inventories" tab, click "+ Create version"
- Click "Select" in the "Upload a file" tile and select the JSON file downloaded to your computer.
- Specify "Submission year" and "Default version" and click "Create inventory".
- Specify applicable version settings and click "Go to data entry" to start working on your inventory.
- Data imported from the IPCC software will already be populated in the data entry grids and you can edit/modify the data if needed.



Scan the QR code for exercise guide





**United Nations** Climate Change

## Thank you for attending!

Let's keep this conversation going.

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Let's work **#Together4Transparency** Find out more at:

https://unfccc.int/Transparency

Contact us at: <u>Tools.Support@unfccc.int</u>

