

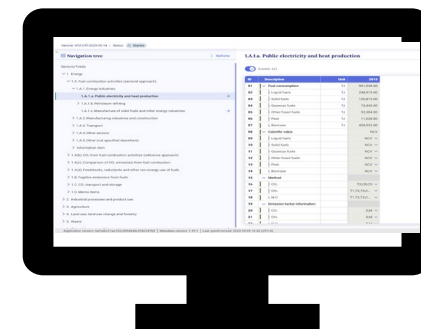
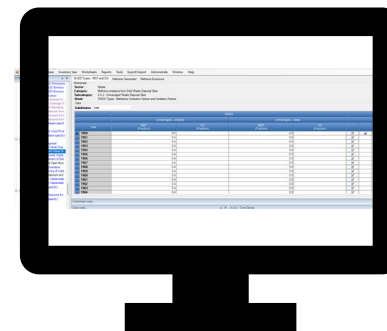


# Interoperability between the IPCC Inventory Software and the UNFCCC ETF Reporting Tool

IPCC TFI TSU  
UNFCCC COP28  
December 2023

# Outline

- ✓ Background
- ✓ What is interoperability and why is it important?
- ✓ Using the IPCC Inventory Software to help meet UNFCCC ETF reporting
- ✓ The road ahead
- ✓ Demonstration



ipcc

INTERGOVERNMENTAL PANEL ON climate change



# Background

- ✓ By the end of next year (31 December 2024), countries will submit their National GHG Inventory (NGHGI) in the first **biennial transparency report (BTR)** consisting of a narrative document and reporting tables/ formats.
- ✓ **Decision 5/CMA.3** mandates the UNFCCC to develop reporting tools for the electronic reporting of the tables and formats, including **common reporting tables (CRT) for GHG inventory**.
- ✓ Decision 5/CMA.3 requests the UNFCCC secretariat **to facilitate interoperability** between the reporting tool and the IPCC Inventory Software and invites the IPCC to participate in this effort.

ipcc

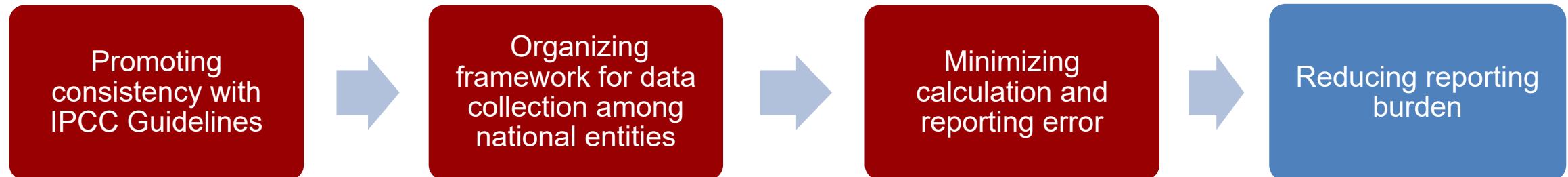
INTERGOVERNMENTAL PANEL ON climate change



# Interoperability: What it is and why it is important?

**Interoperability:** “The ability of computer systems or software to exchange and make use of information” -Oxford Dictionary

- ✓ In practice, the goal is to enable a country to use the IPCC Inventory Software to estimate its GHG emissions and removals in accordance with *good practice* in the *2006 IPCC Guidelines* and generate a file that could be received and read by the UNFCCC ETF reporting tool to facilitate reporting of NGHGI under the Paris Agreement.
- ✓ IPCC Inventory Software becomes a central component of a Party’s institutional arrangements.

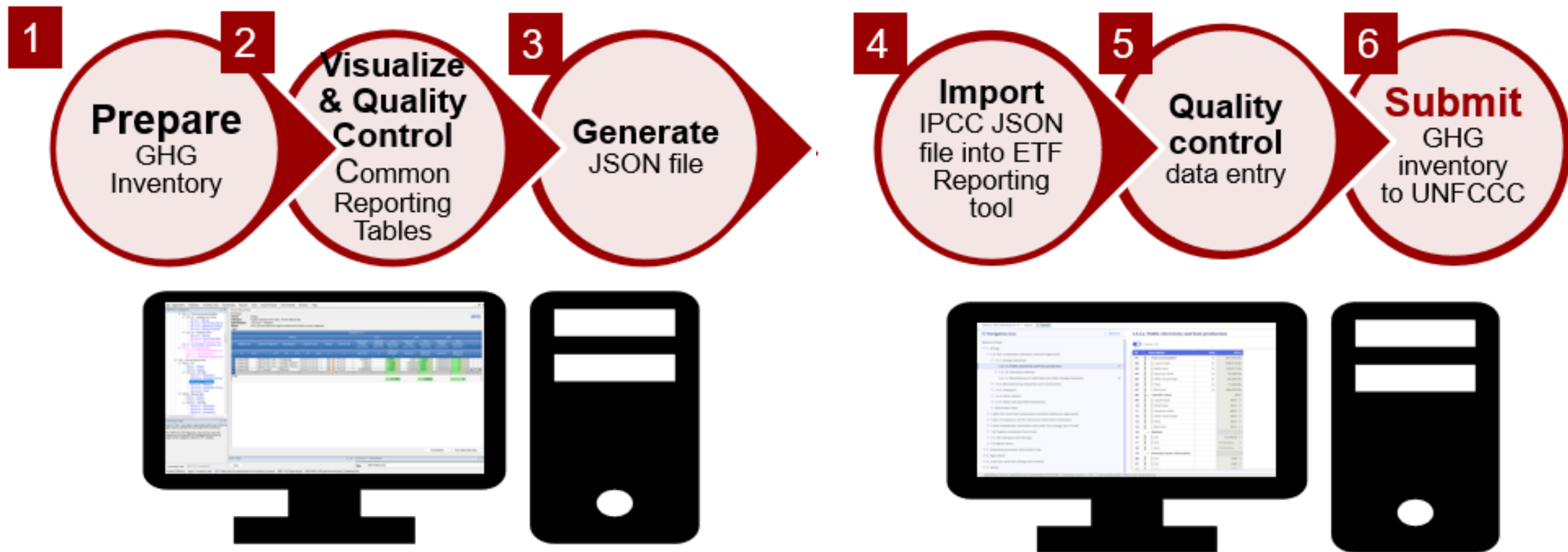


ipcc

INTERGOVERNMENTAL PANEL ON climate change



# Steps of Interoperability



**IPCC Inventory Software**

**UNFCCC ETF Reporting Tool**

# Step 1: Prepare GHG Inventory

Fuel Consumption Data | Fuel Combustion Emissions

Worksheet

Sector: Energy 2015

Category: Fuel Combustion Activities

Subcategory: 1.A.1b - Petroleum Refining

Sheet: Fuel Consumption Data

Data

Fuel Type: Solid Fuels

Equation 2.4

Subdivision	Fuel	Consumption Unit	Consumption (Mass, Volume or Energy Unit)	Conversion Factor (TJ/Unit) (NCV)	Total consumption (TJ)
S	F	U	C	CF	TC = C * CF
Unspecified	Anthracite	Gg (Auto CF)	530	26.7	14151
Unspecified	Coke Oven Coke / Lignite Coke	Gg (Auto CF)	2000	28.2	56400
Total					70551

Annotations:

- Category = Petroleum Refining
- Fuel = Solid Fuels
- Total Consumption = 70,551 TJ

Enter activity data, emission factors and other parameters, using your selected IPCC tier(s) for each category. The Software contains tools to help facilitate data entry (e.g: Fuel Manager and “Time Series Data Entry”). Activity data, emissions (and some parameters) will be transferred to the UNFCCC ETF Reporting Tool.

Fuel Consumption Data | Fuel Combustion Emissions

Worksheet

Sector: Energy 2015

Category: Fuel Combustion Activities

Subcategory: 1.A.1b - Petroleum Refining

Sheet: Fuel Combustion Emissions

Data

Fuel Type: Solid Fuels

Uncertainties for Solid Fuels

Equation 2.4

Subdivision	Fuel	Total consumption (TJ)	CO2 Emissions (Gg CO2)	CH4 Emissions (Gg CH4)	N2O Emissions (Gg N2O)																																																
S	F	TC	CO2	CH4	N2O																																																
Unspecified	Anthracite	14151	1386.0433	0.01415	0.02123																																																
<table border="1"> <thead> <tr> <th colspan="2">Technology</th> <th colspan="2">CO2</th> <th colspan="2">CH4</th> <th colspan="2">N2O</th> </tr> <tr> <th>Type of Technology</th> <th>Technology penetration (%)</th> <th>Consumption (TJ)</th> <th>CO2 Emission Factor (kg CO2/TJ)</th> <th>Amount Captured (Gg CO2)</th> <th>CO2 Emissions (Gg CO2)</th> <th>CH4 Emission Factor (kg CH4/TJ)</th> <th>CH4 Emissions (Gg CH4)</th> <th>N2O Emission Factor (kg N2O/TJ)</th> <th>N2O Emissions (Gg N2O)</th> </tr> <tr> <th>T</th> <th>P</th> <th>C=TC*(P/100)</th> <th>EF(CO2)</th> <th>Z</th> <th>CO2=C*EF(CO2)/10*6-Z</th> <th>EF(CH4)</th> <th>CH4=C*EF(CH4)/10*6</th> <th>EF(N2O)</th> <th>N2O=C*EF(N2O)/10*6</th> </tr> </thead> <tbody> <tr> <td>Unspecified</td> <td>100</td> <td>14151</td> <td>98300</td> <td>5</td> <td>1386.0433</td> <td>1</td> <td>0.01415</td> <td>1.5</td> <td>0.02123</td> </tr> <tr> <td colspan="2">Total</td> <td>14151</td> <td></td> <td></td> <td>1386.0433</td> <td></td> <td>0.01415</td> <td></td> <td>0.02123</td> </tr> </tbody> </table>						Technology		CO2		CH4		N2O		Type of Technology	Technology penetration (%)	Consumption (TJ)	CO2 Emission Factor (kg CO2/TJ)	Amount Captured (Gg CO2)	CO2 Emissions (Gg CO2)	CH4 Emission Factor (kg CH4/TJ)	CH4 Emissions (Gg CH4)	N2O Emission Factor (kg N2O/TJ)	N2O Emissions (Gg N2O)	T	P	C=TC*(P/100)	EF(CO2)	Z	CO2=C*EF(CO2)/10*6-Z	EF(CH4)	CH4=C*EF(CH4)/10*6	EF(N2O)	N2O=C*EF(N2O)/10*6	Unspecified	100	14151	98300	5	1386.0433	1	0.01415	1.5	0.02123	Total		14151			1386.0433		0.01415		0.02123
Technology		CO2		CH4		N2O																																															
Type of Technology	Technology penetration (%)	Consumption (TJ)	CO2 Emission Factor (kg CO2/TJ)	Amount Captured (Gg CO2)	CO2 Emissions (Gg CO2)	CH4 Emission Factor (kg CH4/TJ)	CH4 Emissions (Gg CH4)	N2O Emission Factor (kg N2O/TJ)	N2O Emissions (Gg N2O)																																												
T	P	C=TC*(P/100)	EF(CO2)	Z	CO2=C*EF(CO2)/10*6-Z	EF(CH4)	CH4=C*EF(CH4)/10*6	EF(N2O)	N2O=C*EF(N2O)/10*6																																												
Unspecified	100	14151	98300	5	1386.0433	1	0.01415	1.5	0.02123																																												
Total		14151			1386.0433		0.01415		0.02123																																												
<table border="1"> <thead> <tr> <th>Subdivision</th> <th>Fuel</th> <th>Total consumption (TJ)</th> <th>CO2 Emissions (Gg CO2)</th> <th>CH4 Emissions (Gg CH4)</th> <th>N2O Emissions (Gg N2O)</th> </tr> <tr> <th>S</th> <th>F</th> <th>TC</th> <th>CO2</th> <th>CH4</th> <th>N2O</th> </tr> </thead> <tbody> <tr> <td>Unspecified</td> <td>Coke Oven Coke / Lignite Coke</td> <td>56400</td> <td>0</td> <td>0</td> <td>0</td> </tr> <tr> <td colspan="5">Total</td> <td>70551</td> </tr> </tbody> </table>						Subdivision	Fuel	Total consumption (TJ)	CO2 Emissions (Gg CO2)	CH4 Emissions (Gg CH4)	N2O Emissions (Gg N2O)	S	F	TC	CO2	CH4	N2O	Unspecified	Coke Oven Coke / Lignite Coke	56400	0	0	0	Total					70551																								
Subdivision	Fuel	Total consumption (TJ)	CO2 Emissions (Gg CO2)	CH4 Emissions (Gg CH4)	N2O Emissions (Gg N2O)																																																
S	F	TC	CO2	CH4	N2O																																																
Unspecified	Coke Oven Coke / Lignite Coke	56400	0	0	0																																																
Total					70551																																																

Annotations:

- Enter technology / penetration / capture - allows for higher tiers
- Enter CO2, CH4, N2O EFs - default or country-specific
- CO2 = 1386.04 kt, CH4 = 0.01 kt, N2O = 0.02 kt

**Repeat for all categories that occur in your country**

# Step 2: Visualize & Quality Control Common Reporting Tables

The screenshot displays the IPCC Inventory Software interface. The 'Export/Import' menu is highlighted with a circled '1'. The 'New CRT Data Set' dialog box is open, showing the name 'For COP28' (circled '3') and a list of years from 1996 to 2016. The year 2015 is selected (circled '4'). The 'CRT Data Set Manager' window shows a table with two entries: 'CRT testing' (created 30.06.2023 10:36:25) and 'For COP28' (created 28.10.2023 18:18:09). A dialog box asks 'Would you like to perform data collection for newly added CRT Data Set? This may take a while depending on number of years.' with a circled '5' and 'Yes'/'No' buttons. The 'New CRT Data Set' button in the dialog is also circled '2'.

CRT Data Set name	Date created
CRT testing	30.06.2023 10:36:25
For COP28	28.10.2023 18:18:09

Year	Selected
1996	<input type="checkbox"/>
1997	<input type="checkbox"/>
1998	<input type="checkbox"/>
1999	<input type="checkbox"/>
2000	<input type="checkbox"/>
2001	<input type="checkbox"/>
2002	<input type="checkbox"/>
2003	<input type="checkbox"/>
2004	<input type="checkbox"/>
2005	<input type="checkbox"/>
2006	<input type="checkbox"/>
2007	<input type="checkbox"/>
2008	<input type="checkbox"/>
2009	<input type="checkbox"/>
2010	<input type="checkbox"/>
2011	<input type="checkbox"/>
2015	<input checked="" type="checkbox"/>
2016	<input type="checkbox"/>

1. Access CRT interface in Main Menu under “Export/Import”
2. Select “New CRT Data Set”
3. Name the CRT data set to be generated
4. Select the year(s) for export to CRT
5. Feed worksheet data into CRT visualized in Software

# Step 2: Visualize & Quality Control Common Reporting Tables

Sector: Energy Year: 2015 Refresh values

Table1 | 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

**TABLE 1.A(a) SECTORAL BACKGROUND DATA FOR ENERGY**  
 Fuel combustion activities - sectoral approach (Sheet 1 of 4)

GREENHOUSE GAS SOURCE AND SINK CATEGORIES	AGGREGATE ACTIVITY DATA		IMPLIED EMISSION FACTORS			EMISSIONS			AMOUNT CAPTURED	Information		
	Consumption	NCV/IGCV	CO2	CH4	N2O	CO2	CH4	N2O	CO2	CO2		
	(TJ)		(t/TJ)	(kg/TJ)	(kg/TJ)	(kt)	(kt)	(kt)	(kt)	Method	EF	Method
Biomass (3)	408532					34928.898	10.12247	1.06858	-105			
1.A.1.a.i. Electricity generation	453869					12680.8623	10.4336	1.37689	-235			
Liquid fuels	78793	NCV				5622.0113	0.17725	0.03782	-20			
Solid fuels	40350	NCV				3792.165	0.05325	0.06698	-15			
Gaseous fuels (6)	24000	NCV				1341.4	0.024	0.24	-5			
Other fossil fuels (7)	25100	NCV				1921.83	0.753	0.1004	-10			
Peat (8)	976	NCV				3.456	NE	0.00146	-100			
Biomass (3)	284650	NCV				26334.71	9.4261	0.93024	-85			
1.A.1.a.ii. Combined heat and power generation	240730.6					14681.7323	2.12136	0.30749	-35			
Liquid fuels	88434	NCV				6180.4636	0.25898	0.04943	-5			
Solid fuels	42993	NCV				3230.4451	0.06197	0.03983	-5			
Gaseous fuels (6)	24480	NCV				1368.328	0.02448	0.00245	-5			
Other fossil fuels (7)	25500	NCV				3379.87	0.765	0.102	-5			
Peat (8)	4977.6	NCV				522.6256	0.49776	0.00747	-5			
Biomass (3)	54346	NCV				3951.0264	0.51317	0.10632	-10			
1.A.1.a.iii. Heat plants	266439.2					17004.356	1.73199	2.82503	-15			
Liquid fuels	81692	NCV				6176.578	0.22417	0.05738	-5			
Solid fuels	43472	NCV				4382.8876	0.04347	0.06521	NE			
Gaseous fuels (6)	24960	NCV				1400.256	0.02496	2.496	NE			
Other fossil fuels (7)	41704	NCV				4506.6632	1.25112	0.16682	NE			
Peat (8)	5075.2	NCV				537.9712	0.00508	0.00761	NE			
Biomass (3)	69536	NCV				4643.1616	0.18319	0.03202	-10			
1.A.1.b. Petroleum refining	262926.2					12319.28888	3.54204	2.72964	-60			
Liquid fuels	141351	NCV				9510.4717	0.34651	0.06167	-30			
Solid fuels	70551	NCV				1386.0433	0.01415	0.02123	-5			
Gaseous fuels (6)	25440	NCV				1422.184	0.02544	2.544	-5			
Other fossil fuels (7)	50	NCV				0.585	0.015	0.02	-4			
Peat (8)	9760	NCV				0.00488	0.00976	0.01464	NE			
Biomass (3)	15774.2	NCV				1749.04	3.13118	0.06811	-16			
1.A.1.c. Manufacture of solid fuels and other energy in	1699072.202					121095.79696	24.06214	5.83174	-161.5			

Checks done for all tables / all years

Review Values

Guidance available (CRT footnotes, and IPCC Inventory Software notes)

Legend

**Note:** Minimum level of aggregation is needed to protect confidential business and military information, where it would identify particular entity's/entities' confidential data.

**Note:** A Party may collapse rows below 1.A.1.b and 1.A.1.c up to the 1.A.1.b and 1.A.1.c level when: all the data must be aggregated to protect confidential business and military information; and this data can be used to identify particular entity(ies). The rows will be expanded for display purposes. An explanation of why this has been applied will be provided in the documentation box.

IPCC Inventory Software notes

- To implement the second note, users can mark values mapped in this CRT with the notation key "C". Note that Totals calculated in orange cells won't change because of the input of "C".
- Orange cells above that contain no information (i.e. are blank) will be calculated automatically by the UNFCCC reporting tool. No action by the user is required.



# Step 2: Visualize & Quality Control Common Reporting Tables

**Add comments, explanatory information for NE / IE / FX and documentation box.**

**Some user tips**

**Right click any cell and select "Edit".**

**If value is in cell, you can add comments.**

**If "IE", "NE" or "FX" is in cell you shall provide a justification**

**Legend**

- (1) The IEFs for CO2 are estimated on the basis of gross emissions, i.e. CO2 emissions plus the absolute amount captured.
- (2) Final CO2 emissions after subtracting the amounts of CO2 captured.
- (3) Although CO2 emissions from biomass are reported in this table, they will not be included in the total CO2 emissions from fuel combustion. The value for total CO2 emissions from biomass is recorded in table1 under the memo items. If CO2 is captured from biomass combustion and transferred to long-term storage, the recovered amounts should be reflected in the total emission for the sector, i.e. contribute with a negative emission. See the 2006 IPCC Guidelines (vol. 2, chap. 2, p.2.37; and chap. 5, p.5.8).
- (4) Enter the amount of CO2 captured as a negative number since this amount is subtracted from the total CO2 produced.

**Documentation box**

- Parties should provide a detailed description of the fuel combustion subsector in the relevant section of chapter 3 ("Energy" (CRT subsector 1.A)) of the NID. Use this documentation box to provide references to relevant sections of the NID, if any additional information and/or further details are needed to explain the contents of this table.
- If estimates are based on GCVs, provide in this documentation box a reference to the relevant section of the NID where the information necessary for calculating the AD based on NCVs can be found.
- If derived gases (e.g. gas works gas, coke oven gas, blast furnace gas) are considered, provide in this documentation box a reference to the relevant section of the NID where the information necessary for calculating the AD based on NCVs can be found.

**IPCC Inventory Software notes**

- To implement the first note, users can mark values mapped in this CRT with the notation key calculated in orange cells will not change.
- Please describe in the "Documentation Box" the liquid fuels included in the estimates report [IPCC Software 1.A.4.c.ii] and "Other liquid fuels [IPCC Software 1.A.4.c.iii]."
- Please describe in the "Documentation Box" the other fossil fuels included in the estimates report [IPCC Software 1.A.4.c.ii] and "Other fossil fuels [IPCC Software 1.A.4.c.iii]."
- In cells within categories "1.A.4.a.ii - Off-road vehicles and other machinery", "1.A.4.b.ii - Off-road machinery", "1.A.4.c.ii - Off-road vehicles and other machinery" and "Other mobile (other)" [IPCC Software 1.A.4.c.1.A.5.b.iii] activity data from worksheet "Fuel consumption Data" of the relevant category Software are mapped. Users that apply a combination of Tiers, including IPCC Tier 3 equation

# Step 2: Visualize & Quality Control Common Reporting Tables

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

Sector Waste Year 2015 Refresh values

Table5 Table5.A Table5.B Table5.C Table5.D

**TABLE 5.B SECTORAL BACKGROUND DATA FOR WASTE**  
**Biological Treatment of Solid Waste (Sheet 1 of 1)**

Greenhouse gas source and sink categories	ACTIVITY DATA AND OTHER RELATED INFORMATION	IMPLIED EMISSION FACTOR		EMISSIONS		Amount flared
	Annual waste amount treated	CH4 (2)	N2O	CH4 (3)	N2O	
	(kt dm)	(g/kg waste)	(g/kg waste)	(kt)	(kt)	
5.B.1. Composting	112767			1062.285	1711.889	
5.B.1.a. Municipal solid waste	99234			987.34	1389.276	
5.B.1.b. Other (please specify) (5)	13533			74.945	322.613	
Industrial waste [IPCC Software 4.B]	7856			73.56	180.688	
Sludge [IPCC Software 4.B]	5677			1.385	141.925	
Other waste [IPCC Software 4.B]	NO			NO	NO	
5.B.2. Anaerobic digestion at biogas facilities (4)	18132			23.106	916.232	
5.B.2.a. Municipal solid waste	6778			FX	FX	
5.B.2.b. Other (please specify) (5)	11354			23.106	916.232	
Industrial waste [IPCC Software 4.B]	4566			12.53	237.432	
Sludge [IPCC Software 4.B]	6788			10.576	678.8	
Other waste [IPCC Software 4.B]	NO			NO	NO	

CRT Variable Detail

Summary Description Party comment User comment Official comment FX

MPG Flexibility Provision:

Description of the application of flexibility:

Clarification of capacity constraint:

Timeframe for improvement:

Progress made in addressing areas of improvement:

Save Cancel

Right click any cell with “FX” and select “Edit”.

User can enter information to complete “Flex\_Summary” CRT table

# Step 2: Visualize & Quality Control Common Reporting Tables

IPCC Inventory Software - eduardk3007 - [CRT Tables - For COP28]

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

Sector: Waste Year: 2015 Refresh values

Table5 | Table5.A | Table5.B | Table5.C | Table5.D

**TABLE 5.B SECTORAL BACKGROUND DATA FOR WASTE**  
Biological Treatment of Solid Waste (Sheet 1 of 1)

Greenhouse gas source and sink categories	ACTIVITY DATA AND OTHER RELATED INFORMATION	IMPLIED EMISSION FACTOR		EMISSIONS		RECOVERY (1)	Information to Summary 3 CRT			
		Annual waste amount treated	CH4 (2)	N2O	CH4 (3)	N2O	CH4	CH4		N2O
	(kt dm)	(g/g)					Method	EF	Method	EF
5.B.1. Composting	112767									
5.B.1.a. Municipal solid waste	99234									
5.B.1.b. Other (please specify) (5)	13533									
Industrial waste [IPCC Software 4.B]	7856									
Sludge [IPCC Software 4.B]	5677									
Other waste [IPCC Software 4.B]	NO									
5.B.2. Anaerobic digestion at biogas facilities (4)	18132									
5.B.2.a. Municipal solid waste	6778									
5.B.2.b. Other (please specify) (5)	11354									
Industrial waste [IPCC Software 4.B]	4566									
Sludge [IPCC Software 4.B]	6788									
Other waste [IPCC Software 4.B]	NO									

CRT Variable Detail

EF Description Party comment User comment Official comment

UID: ca9e25e4-0226-41bc-94e8-0e00824b975f

Selected	Notation	Remark
<input type="checkbox"/>	D	IPCC Default
<input type="checkbox"/>	CR	CORINAIR
<input type="checkbox"/>	CS	Country-Specific
<input type="checkbox"/>	M	Model
<input type="checkbox"/>	PS	Plant-Specific
<input type="checkbox"/>	OTH	Other

Save Cancel

Legend

- Enter the amount of recovery as a negative number since this amount is subtracted from the emissions prior to recovery.
- The CH4 IEF is calculated on the basis of gross CH4 emissions as follows: IEF = (CH4 emissions + the amount of CH4 recovered/flared)/annual waste amount treated.
- Actual emissions (after recovery and flaring).
- If CH4 emissions recovered are used for energy, the emissions from the combustion process should be reported under category 1.A.
- This category should include all organic waste from sources not covered by MSW.

IPCC Inventory Software notes

Orange cells above that contain no information (i.e. are blank) will be calculated. No action by the user is required.

Right click on any blue cell.

User can enter information on method and EF applied to complete CRT Summary 3

# Step 3: Generate JSON file

The screenshot shows the 'Fuel Combustion Emissions' worksheet. A 'CRT Data Set Manager' dialog box is open, displaying a table of data sets. The 'For COP28' data set is selected. A smaller dialog box titled 'Select sector and years' is open over it, showing '2015' selected in the 'Years' list. The 'OK' button in this dialog is highlighted with a red box and a circled '3'. The 'Generate JSON' button in the main dialog is also highlighted with a red box and a circled '1'. A circled '2' points to the 'Sector' dropdown menu in the 'Select sector and years' dialog.

CRT Data Set name	Date created
CRT testing	30.06.2023 10:36:25
For COP28	28.10.2023 18:18:09

Sector	Years
(All)	<input checked="" type="checkbox"/> 2015

Variable	Value
Unspecified	24000
Unspecified	13750
Unspecified	50400

```
{
  "version": {
    "metadata_ver": "1.2",
    "country": "JPN",
    "data_version": "IPCC-CRT-v1.0",
    "metadata_type": "CRT"
  },
  "data": {
    "values": [
      {
        "inventory_year": 2015,
        "values": [
          {
            "variable_uid": "a5db0b3c-8502-4126-8d71-bc2ad2ec7af",
            "value": {
              "type": "numeric",
              "value": 3.0
            }
          },
          {
            "variable_uid": "1bb6d10e-9495-4277-b612-86e7e2ea4aad",
            "value": {
              "type": "numeric",
              "value": 3.0
            }
          },
          {
            "variable_uid": "c9d9e633-df3e-41df-879b-1bc9e8ccb402",
            "value": {
              "type": "numeric",
              "value": 3.0
            }
          },
          {
            "variable_uid": "f2a0404d-1466-4499-a6a1-ada7ba22a9be",
            "value": {
              "type": "numeric",
              "value": 3.0
            }
          }
        ]
      }
    ]
  }
}
```

1. Select "Generate JSON"
2. Select years you want to use for UNFCCC reporting (Note, if a country applies flexibility, it may choose to include years in Software, but exclude from JSON file for ETF Reporting tool)
3. Select "OK" to generate JSON
4. The JSON file can be uploaded to ETF Reporting Tool

# Step 4: Import IPCC JSON file into ETF Reporting tool



ETF | GHG INVENTORY  
Reporting tool

Enter >

Please select an option to start working on an inventory

### Create blank inventory

Please select this option to create a new blank inventory and start working on it.

Start

### Select an existing inventory

Please select this option if you would like to work on or make a copy of an existing inventory.

Start

### Upload a file

Please select this option if you would like to create a new version by uploading a JSON file.

Start

1. Select 'Upload a file'
2. Drag and drop or upload JSON file from previous step
3. You will be prompted to enter version settings:
  - Submission year
  - For developing countries, if you are applying flexibilities for time series/latest year
  - Sector-specific selections (e.g., fuels, NCV/GCV, Option A/B for cattle, HWP options)

# Step 5: Quality Control Data Entry

ETF | GHG INVENTORY | Inventories | **Data entry** | Reporting tables | QA/QC

Version: XYZ-CRT-2025-V1.02 | Status: Started

**Navigation tree** Options

- Sectors/Totals
  - 1. Energy
    - 1.A. Fuel combustion activities (sectoral approach)
      - 1.A.1. Energy industries
        - 1.A.1.a. Public electricity and heat production
        - 1.A.1.b. Petroleum refining
          - Liquid fuels
          - Solid fuels**
          - Gaseous fuels
          - Other fossil fuels
          - Peat
          - Biomass
        - 1.A.1.c. Manufacture of solid fuels and other energy industries
      - 1.A.2. Manufacturing industries and construction
      - 1.A.3. Transport
      - 1.A.4. Other sectors
      - 1.A.5. Other (not specified elsewhere)
      - Information item
    - 1.A(b). CO<sub>2</sub> from fuel combustion activities (reference approach)
    - 1.A(c). Comparison of CO<sub>2</sub> emissions from fuel combustion
    - 1.A(d). Feedstocks, reductants and other non-energy use of fuels
    - 1.B. Fugitive emissions from fuels

**1.A.1.b. Petroleum refining > Solid fuels**

Expand all

ID	Description	Unit	1990
01	Fuel consumption	TJ	70,551.00
02	Calorific value		NCV
03	Method		
04	CO <sub>2</sub>		T1
05	CH <sub>4</sub>		T1
06	N <sub>2</sub> O		T1
07	Emission factor information		
08	CO <sub>2</sub>		D
09	CH <sub>4</sub>		D
10	N <sub>2</sub> O		D
11	Emissions		
12	CO <sub>2</sub>	kt	1,386.04
13	CH <sub>4</sub>	kt	0.01
14	N <sub>2</sub> O	kt	0.02
15	Amount captured		
16	CO <sub>2</sub>	kt	-5.00
17	Implied emission factor		
18	CO <sub>2</sub>	t/TJ	19.72
19	CH <sub>4</sub>	kg/TJ	0.20
20	N <sub>2</sub> O	kg/TJ	0.30
21	Documentation box		

Application version: d3871fd34e90ef87becce65a78defbfd | Metadata version: 1.19.6 | Last synchronised: 2023-11-30 17:48 (UTC+4)

Use of the IPCC JSON file is a means of data input into the ETF Reporting Tool. Users can check all data input grids and reporting tables in the ETF Reporting Tool.

Users should quality control their imported IPCC data prior to submission.

Note: The implied emission factors will be calculated here; they were not shown in the IPCC Inventory Software

# Step 6: Submit GHG Inventory to UNFCCC ...and then start preparing for next submission



**Remember:** The ETF Reporting tool is the official tool for submission of data to the UNFCCC to meet reporting obligations under the Paris Agreement.

**And...** with the inventory you have created in the IPCC Inventory Software, you are well prepared to build on it for your next BTR GHG inventory submission.

**Thus...** helping build a sustainable GHG inventory system.

Subdivision	Fuel	Consumption Unit	Conversion (Mass Volume of Energy Unit)	Conversion Factor (tCO <sub>2</sub> e/GJ)	Total consumption (tCO <sub>2</sub> e)
Unspecified	Anthracite	GJ (Ann CF)	500	26.7	13350
Unspecified	Canary Coal	GJ (Ann CF)	500	26.2	13100
Unspecified	Other Bituminous Coal	GJ (Ann CF)	500	26.8	13000
Total					40350

# Support Resources Available

DRAFT

IPCC Inventory Software

UNFCCC Interoperability –  
CRT Export Quick Start Guide

## Contents

Introduction .....	3
CRT Data Set management .....	3
What is CRT Data Set .....	3
CRT Data Set management screen .....	3
New CRT Data Set .....	4
Edit CRT Data Set .....	5
Open tables.....	6
Generate JSON.....	6
Refresh values.....	7
Delete CRT Data Set.....	8
CRT Tables .....	9
CRT Table actions .....	10
Single-cell actions .....	10
Multi-cell actions .....	13
Editable cells .....	15
CRT Table Documentation Box.....	16

**This Guide was prepared by the Technical Support Unit (TSU) of the IPCC Task Force on National Greenhouse Gas Inventories (TFI) to help users of the IPCC Inventory Software.**

**It has not been subject to formal IPCC review procedures.**

- Description of functionalities in IPCC Inventory Software to prepare data for generation of JSON file for use by UNFCCC electronic reporting tool.

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

ipcc

INTERGOVERNMENTAL PANEL ON climate change





# The Road Ahead

- ✓ Multiple releases between now and June 2024, are expected
- ✓ Countries actively preparing for their first BTR submission are encouraged to use the IPCC Inventory Software
  - ✓ The features shown today are ready for the Energy, Waste and Agriculture sectors
  - ✓ We expect LULUCF to be available next, followed by IPPU
- ✓ Learn more about IPCC Inventory Software and download the latest version:  
<https://www.ipcc-nggip.iges.or.jp/software/index.html>
- ✓ Please continue to support us through testing and reporting your findings to [ipcc-software@iges.or.jp](mailto:ipcc-software@iges.or.jp)

November  
2023

Released version 2.89 of IPCC Inventory Software (continue testing functions of interoperability)

Multiple updated releases of IPCC Inventory Software

June 2024

Aim for final version of CRT: interoperable with IPCC Inventory Software

ipcc

INTERGOVERNMENTAL PANEL ON climate change



# Thank you

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