

Plan d'assurance et de
contrôle qualité (AQ/CQ)
de l'inventaire des gaz à
effet de serre (GES)
1990–2022 : Introduction
générale

Initiative pour la transparence de l'action climatique – ICAT

Plan d'assurance et de contrôle qualité (QA/QC) de l'inventaire des gaz à effet de serre (GES) 1990–2022 : Introduction générale Livrable 2.d

Auteur : Traute Köther, Consultante Indépendant, Novembre 2025

AVERTISSEMENT

Tous droits réservés. Aucune partie de cette publication ne peut être reproduite, stockée dans un système de recherche ou transmise, sous quelque forme ou par quelque moyen que ce soit - électronique, par photocopie, enregistrement ou autre - à des fins commerciales sans l'autorisation préalable de l'Algérie. À défaut, le contenu de cette publication peut être utilisé, partagé, copié, reproduit, imprimé et/ou stocké, à condition que l'Algérie et ICAT soient dûment mentionnés comme source. En aucun cas le contenu ne peut être altéré ou autrement modifié sans l'autorisation expresse de l'Algérie.

PRÉPARÉ DANS LE CADRE DE

L'Initiative pour la transparence de l'action climatique (ICAT), soutenue par l'Autriche, le Canada, l'Allemagne, l'Italie, et la Children's Investment Fund Foundation.

Supported by:
 Federal Foreign Office
on the basis of a decision
by the German Bundestag

 IKI INTERNATIONAL CLIMATE INITIATIVE

 CHILDREN'S INVESTMENT FUND FOUNDATION

 MINISTERO DELL'AMBIENTE
E DELLA SICUREZZA ENERGETICA

 Federal Ministry
Republic of Austria
Climate Action, Environment,
Energy, Mobility,
Innovation and Technology



Environment and
Climate Change Canada

Environnement et
Changement climatique Canada

L'ICAT est légalement hébergée par UNOPS.



PEOPLE'S DEMOCRATIC REPUBLIC OF ALGERIA
MINISTRY OF THE ENVIRONMENT AND QUALITY OF LIFE

QA/QC Plan
to the
GHG inventory 1990-2022

November 2025

CONTENT
LIST OF TABLES 4**LIST OF FIGURES..... 5**

1	NATIONAL CIRCUMSTANCES, INSTITUTIONAL ARRANGEMENTS AND CROSS-CUTTING INFORMATION.....	6
1.1	Brief general description of methodologies and data sources used.....	6
1.1.1.1	Use of the 2006 IPCC Guidelines and Refinements to the 2006 IPCC GL.....	6
1.1.1.2	Decision tree and Good Practice method.....	7
1.2	Brief description of key categories.....	13
1.2.1	Level of disaggregation and identification of key categories.....	13
1.2.2	Level Assessment.....	13
1.2.3	Trend Assessment.....	14
1.2.4	Results of the Key Categories Analysis (KCA) without LULUCF for 1990 and 2022.....	15
1.2.5	Results of the Key Categories Analysis (KCA) including LULUCF for 1990 - 2022.....	23
1.3	Brief general description of QA/QC plan and implementation.....	32
1.3.1	QA/QC plan.....	32
1.3.2	Roles & responsibilities.....	34
1.3.3	Capacity building.....	36
1.3.4	Inventory development cycle and guidance.....	39
1.3.5	Inventory improvement plan.....	44
1.3.6	Quality control (QC) and Quality assurance (QA) procedures.....	46
1.3.6.1	Checklist for general QC checks.....	47
1.3.6.2	Category-specific checklist.....	49
1.3.6.3	QA and review procedures, and verification activities.....	50
1.3.7	Documentation and archiving.....	51
1.3.7.1	Documentation.....	51
1.3.7.2	Expert judgements.....	51
1.3.7.3	Archiving.....	53
1.3.7.3.1	Database.....	53
1.3.7.3.2	Structure of the GHG inventory folder.....	53
1.3.7.3.3	Naming convention in folder GHG inventory folder.....	58
1.3.8	Treatment of confidentiality issues.....	58
1.4	General uncertainty assessment, including data pertaining to the overall uncertainty of inventory totals.....	60
2	REFERENCES.....	63
2.1	References – General.....	63
2.2	References of Energy.....	65

List of Tables

Table 1-1	Overview on the use of the Refinements to the 2006 IPCC GL	6
Table 1-2	Notation keys used to specify the method applied, emission factor used report and activity data used	9
Table 1-3	Summary report for methods and emission factors used and source of activity data in IPCC sector 1 Energy.	10
Table 1-4	Overview of Key Categories Analysis (KCA) excluding LULUCF.	15
Table 1-5	Tier 1 - Key Categories Analysis (KCA): Ranking excluding LULUCF	15
Table 1-6	Level Assessment: Key categories without LULUCF 1990	17
Table 1-7	Level Assessment: Key categories without LULUCF 2022	19
Table 1-8	Trend Assessment: Key categories without LULUCF 2022	21
Table 1-9	Overview of Key Categories Analysis (KCA) including LULUCF.	23
Table 1-10	Tier 1 - Key Categories Analysis (KCA): Ranking including LULUCF.	23
Table 1-11	Level Assessment: Key categories including LULUCF 1990	24
Table 1-12	Level Assessment: Key categories including LULUCF 2022	27
Table 1-13	Trend Assessment: Key categories including LULUCF 2022	30
Table 1-14	Specific responsibilities for the preparation of the Algerian GHG inventory 1990 - 2022	34
Table 1-15	Task and responsibilities within the Algerian GHG inventory 1990 - 2022	35
Table 1-16	Capacity building relevant to GHG inventory 1990-2020 and BTRs	36
Table 1-17	Capacity building relevant to GHG inventory 1990-2022	37
Table 1-18	Capacity building by CGE trainings and participation in trainings of review experts	38
Table 1-19	National Inventory preparation schedule / guidance	40
Table 1-20	The inventory improvement plan	45
Table 1-21	Checklist for general QC checks	47
Table 1-22	Category-specific checklist	49
Table 1-23	ReadMe of emission calculation sheets	52
Table 1-24	CHECKLIST CONFIDENTIAL DATA according to IPCC 2006 Guidelines - Chapter 6	59
Table 1-25	Summary report of uncertainties analysis	60
Table 1-26	Global warming potentials (GWP) provided by the IPCC Assessment Reports.	61

List of Figures

Figure 1-1	Decision Tree to choose a Good Practice method.	8
Figure 1-2	Key Categories excluding LULUCF for 1990	18
Figure 1-3	Key Categories excluding LULUCF for 2022	20
Figure 1-4	Key Categories excluding LULUCF - Trend Assessment	22
Figure 1-5	Key Categories including LULUCF for 1990	26
Figure 1-6	Key Categories including LULUCF for 2022	29
Figure 1-7	Key Categories including LULUCF - Trend Assessment	31
Figure 1-8	Continuous improvement	33
Figure 1-9	General data flow between roles and responsibilities	34

Figure 1-10	Inventory development cycle	39
Figure 1-11	General overview of QA/QC procedures	46
Figure 1-12	General overview of the data management inventory system of the Agency	53

1 National circumstances, institutional arrangements and cross-cutting information

1.1 Brief general description of methodologies and data sources used

The main sources for activity data are national statistics from Office National des Statistiques (ONS), Ministry of Energy and Mining, Ministry of Agriculture, and international statistics like UNSD and FAO. In order to fill gaps expert judgement based on discussion with relevant national experts is applied.

The main sources for emission factors of GHG are the

- 2006 IPCC Guidelines for National Greenhouse Gas Inventories¹ and
- 2019 Refinement to the 2006 IPCC Guidelines for National Greenhouse Gas Inventories².
- Country specific emission factors

The emission factors of air pollutants were taken from the EMEP/EEA air pollutant emission inventory guidebook 2019³.

1.1.1.1 Use of the 2006 IPCC Guidelines and Refinements to the 2006 IPCC GL

The following tables provides an overview regarding the use of the Refinements to the 2006 IPCC GL.

Table 1-1 Overview on the use of the Refinements to the 2006 IPCC GL

	Status	2006 IPCC GL	Refinements to the 2006 IPCC GL
IPCC sector 1 Energy			
1.A Fuel combustion	✓	x	
1.B Fugitive emissions from fuels	✓	x	x
1.B.1 Solid Fuels			
1.B.1.a Coal mining and handling	✓	x	
1.B.1.b Fuel transformation	✓	x	
1.B.2 Oil and gas	✓	x	x
1.C CO ₂ Transport and storage	NO		
2 Industrial processes and product Use (IPPU)			
2.A Mineral industry	✓	x	
2.B Chemical industry	✓	x	
2.C Metal industry	✓		x
2.D Non-energy products Solvent use	✓	x	
2.E Electronics industry	NO		
2.F. Product uses as substitutes for ODS	✓		x
2.G Other product manufacture and use	✓	x	
2.H Other	NO		
3 Agriculture			
3.A Enteric fermentation			
3.A.1 Cattle (Option B: country-specific)	✓		x
3.A.2 Sheep, 3.A.3 Swine, 3.A.4 Other livestock (e.g. Camels, Goats, Horses, Mules and Asses)	✓		x
3.B Manure management	✓	x	

¹ available (18 May2022) on <https://www.ipcc-nggip.iges.or.jp/public/2006gl/>

² available (18 May2022) on <https://www.ipcc-nggip.iges.or.jp/public/2019rf/index.html>

³ available (18 May2022) on <https://www.eea.europa.eu/publications/emep-eea-guidebook-2019>

3.C Rice cultivation	NO		
3.D Agricultural soils			
3.D.1 Direct N ₂ O emissions from managed soils			
3.D.1.a Inorganic N fertilizers	✓	x	
3.D.1.b Organic N fertilizers	✓	x	
3.D.2 Indirect N ₂ O Emissions from managed soils	✓	x	
3.E Prescribed burning of savannahs	NO		
3.F Field burning of agricultural residues	✓		x
3.G Liming	NO		
3.H Urea application	✓	x	
3.I Other carbon-containing fertilizers	NO		
3.J Other	NO		
4 LULUCF	✓	x	
5 Waste			
5.A Solid waste disposal	✓		x
5.B Biological treatment of solid waste	✓	x	
5.C Incineration and open burning of waste	✓	x	
5.D Wastewater treatment and discharge	✓		x
5.E Other	NO		

1.1.1.2 Decision tree and Good Practice method

For key categories, the most accurate methods for the preparation of the greenhouse gas inventory should be used. Due to lack of data and resources, it was not possible to estimate all emissions according to the sectoral decision trees. Where the methodological choice is not in line with the sectoral decision tree, actions are defined and listed in the inventory improvement plan.

The following table briefly presents the activity data (AD) sources, the types of emission factors (EF) used, and the methods applied for estimating GHG emissions reported in this NIR. Detailed information on applied methodology, used activity data (AD) and emission factors (EF) are presented in the relevant sectoral chapters.

The preparation of the inventory starts always with identification of the key categories of the previous inventory followed by the selection of the appropriate identify the appropriate method for estimation for each category according to the **decision tree** of each source presented in Volume 2 – 5 of the 2006 IPCC guidelines. In the following Figure the general Decision Tree to choose a **Good Practice method** is presented.

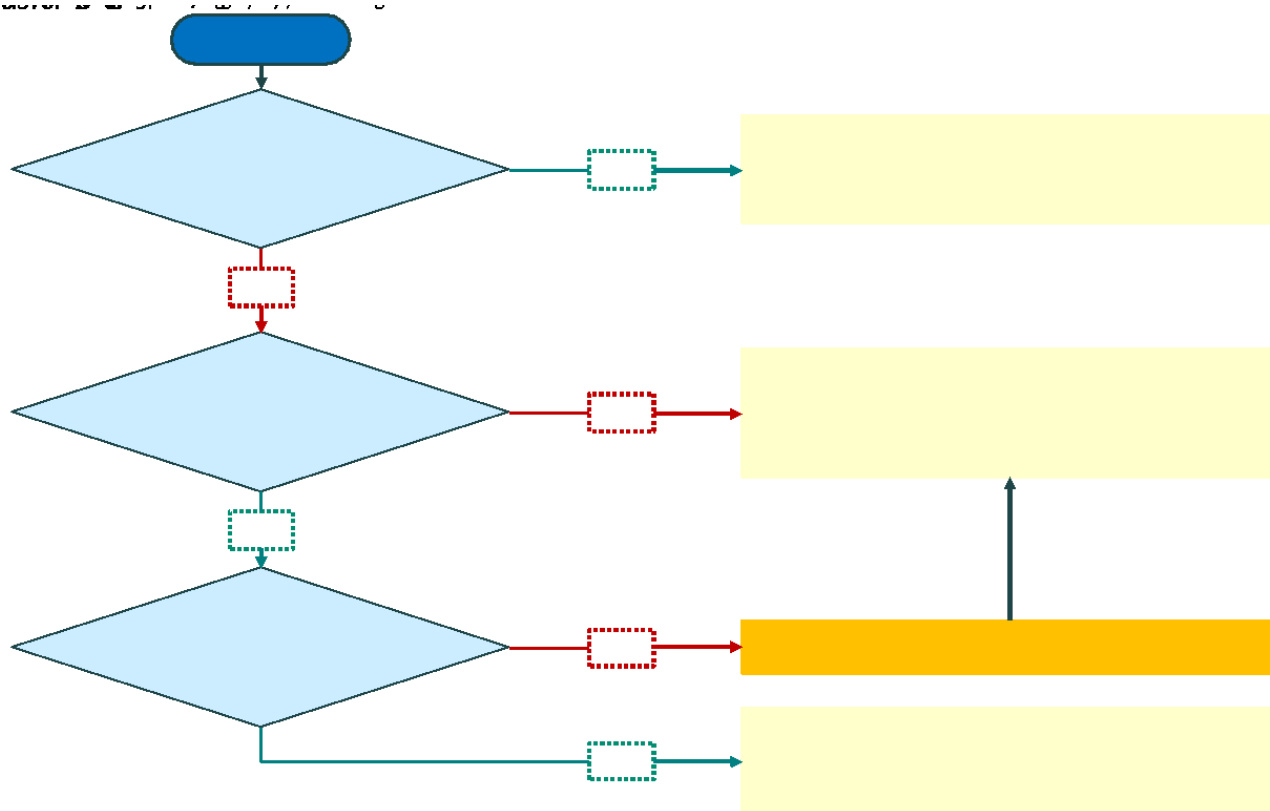


Figure 1-1 Decision Tree to choose a Good Practice method.

Source: 2006 IPCC guidelines, Vol. 1: General Guidance and Reporting, Chap. 1: Introduction to the 2006 Guidelines, sub-chap. 4.1.2 Purpose of the key category analysis, Figure 4.1, p. 4.6.

In the following table, an overview is provided for.

- Notation keys (in general)
- Notation keys to specify the method applied
- Notation keys to specify the emission factor used
- Notation keys to specify the activity data used

Table 1-2 Notation keys used to specify the method applied, emission factor used report and activity data used

Notation keys to specify completeness		Notation keys to specify the method applied			
NA	Not applicable	D	IPCC default	CS	Country Specific
NO	Not occurring	T1	IPCC Tier 1	CR	CORINAIR
NE	Not estimated	T1a, T1b, T1c	IPCC Tier 1a, Tier 1b and Tier 1c, respectively	RA	Reference Approach
IE	Included elsewhere	T2	IPCC Tier 2	OTH	Other
C	Confidential	T3	IPCC Tier 3	M	Model

Notation keys to specify the emission factor used		Notation keys to specify the activity data used			
D	IPCC default	Q	Specific Questionnaire	PS	Plant specific
CS	Country specific	MEM	Ministry of Energy and Mines	EJ	Expert Judgement
PS	Plant specific	ONS	Statistical Office of Algeria	BAT	Best Available Techniques
OTH	Other	UNSD	United Nations Statistics Division	GDL	Global Data Lab
M	Model	FAO	FAO Statistics Division (FAOSTAT)	WPP	United Nations World Population Prospects
		USGS	US Geological Survey	DESA	United Nations Department of Economic and Social Affairs
		ONA	National Sanitation Office		

Table 1-3 Summary report for methods and emission factors used and source of activity data in IPCC sector 1 Energy.

IPCC sector 1	CO ₂			CH ₄			N ₂ O		
	Method applied	Emission factor (EF)	Activity data	Method applied	Emission factor (EF)	Activity data	Method applied	Emission factor (EF)	Activity data
1.A Fuel combustion									
1.A.1 Energy industries									
1.A.1.a Public electricity and heat production	T1	D	MEM/UNSD /Sonatrach/ Sonelgaz	T1	D	MEM/UNSD /Sonatrach/ Sonelgaz	T1	D	MEM/UNSD /Sonatrach/ Sonelgaz
1.A.1.b Petroleum refining	T1	D	MEM/UNSD /Sonatrach/ Sonelgaz	T1	D	MEM/UNSD /Sonatrach/ Sonelgaz	T1	D	MEM/UNSD /Sonatrach/ Sonelgaz
1.A.1.c Manufacture solid fuels Other energy industries	T1	D	MEM/UNSD /Sonatrach/ Sonelgaz	T1	D	MEM/UNSD /Sonatrach/ Sonelgaz	T1	D	MEM/UNSD /Sonatrach/ Sonelgaz
1.A.2 Manufacturing industries Construction									
1.A.2.a Iron and steel	T1	D	MEM/UNSD	T1	D	MEM/UNSD	T1	D	MEM/UNSD
1.A.2.b Non-ferrous metals	NA	NA	IE	NA	NA	IE	NA	NA	IE
1.A.2.c Chemicals	T1	D	MEM/UNSD	T1	D	MEM/UNSD	T1	D	MEM/UNSD
1.A.2.d Pulp paper and print	NA	NA	IE	NA	NA	IE	NA	NA	IE
1.A.2.e Food processing beverages and tobacco	T1	D	MEM/UNSD	T1	D	MEM/UNSD	T1	D	MEM/UNSD
1.A.2.f Non-metallic minerals	T1	D	MEM/UNSD	T1	D	MEM/UNSD	T1	D	MEM/UNSD
1.A.2.g Manufacturing machinery	NA	NA	NO	NA	NA	NO	NA	NA	NO
1.A.2.h Manufacturing transport equipment	NA	NA	NO	NA	NA	NO	NA	NA	NO
1.A.2.i Mining excluding fuels and quarrying	NA	NA	NO	NA	NA	NO	NA	NA	NO
1.A.2.j Wood and wood products	NA	NA	NO	NA	NA	NO	NA	NA	NO
1.A.2.k Construction	T1	D	MEM/UNSD	T1	D	MEM/UNSD	T1	D	MEM/UNSD
1.A.2.l Textile and leather	T1	D	MEM/UNSD	T1	D	MEM/UNSD	T1	D	MEM/UNSD
1.A.2.g.vii Off-road vehicles Other machinery	NA	NA	IE	NA	NA	IE	NA	NA	IE
1.A.2.m Other	T1	D	MEM/UNSD	T1	D	MEM/UNSD	T1	D	MEM/UNSD
1.A.3 Transport									
1.A.3.a Domestic aviation	T1	D	MEM/UNSD	T1	D	MEM/UNSD	T1	D	MEM/UNSD
1.A.3.b Road transportation	T1	D	MEM/UNSD	T1	D	MEM/UNSD	T1	D	MEM/UNSD
1.A.3.c Railways	T1	D	MEM/UNSD	T1	D	MEM/UNSD	T1	D	MEM/UNSD
1.A.3.d Domestic Navigation	T1	D	MEM/UNSD	T1	D	MEM/UNSD	T1	D	MEM/UNSD

IPCC sector 1	CO ₂			CH ₄			N ₂ O		
Energy	Method applied	Emission factor (EF)	Activity data	Method applied	Emission factor (EF)	Activity data	Method applied	Emission factor (EF)	Activity data
1.A.3.e Other transportation	T1	D	MEM/UNSD	T1	D	MEM/UNSD	T1	D	MEM/UNSD
1.A.4 Other sectors									
1.A.4.a Commercial institutional	T1	D	MEM/UNSD	T1	D	MEM/UNSD	T1	D	MEM/UNSD
1.A.4.b Residential	T1	D	MEM/UNSD	T1	D	MEM/UNSD	T1	D	MEM/UNSD
1.A.4.c Agriculture forestry fishing	T1	D	MEM/UNSD	T1	D	MEM/UNSD	T1	D	MEM/UNSD
1.A.5 Other	NE	NA	NE	NE	NA	NA	NE	NA	NE
1.B Fugitive emissions from fuels									
1.B.1 Solid Fuels									
1.B.1.a Coal mining and handling	NO	NA	NA	NO	NA	NA	NO	NA	NA
1.B.1.b Fuel transformation	NA	NA	NA	T1	D	MEM/UNSD	NA	NA	NA
1.B.1.b.i Charcoal and biochar production	NA	NA	NA	NA	NA	NE	NE	NA	NA
1.B.1.b.ii Coke production	NA	NA	NA	T1	D	MEM/UNSD /USBGS	NA	NA	NA
1.B.1.b.iii Coal to liquids	NO	NA	NA	NO	NA	NA	NO	NA	NA
1.B.1.b.iv Gas to liquids	T1	D	MEM/UNSD	T1	D	MEM/UNSD	T1	D	MEM/UNSD
1.B.1.b.v Other	NO	NA	MEM/UNSD	NO	NA	NA	NO	NA	NA
1.B.1.c Other	NO	NA	NE	NO	NA	NA	NO	NA	NE
1.B.2 Oil and gas									
1.B.2.a Oil									
1.B.2.a.i Exploration	T1	D	MEM/UNSD	T1	D	MEM/UNSD	T1	D	MEM/UNSD
1.B.2.a.ii Production and upgrading	T1	D	MEM/UNSD	T1	D	MEM/UNSD	NA	NA	NA
1.B.2.a.iii Transport	T1	D	MEM/UNSD	T1	D	MEM/UNSD	NA	NA	NA
1.B.2.a.iv Refining storage	T1	D	MEM/UNSD	T1	D	MEM/UNSD	T1	D	MEM/UNSD
1.B.2.a.v Distribution of oil products	T1	D	MEM/UNSD	T1	D	MEM/UNSD	NA	NA	NA
1.B.2.a.vi Other	NA	NA	NE	NA	NA	NE	NA	NA	NE
1.B.2.b Natural gas									
1.B.2.b.i Exploration	T1	D	MEM/UNSD	T1	D	MEM/UNSD	T1	D	MEM/UNSD
1.B.2.b.ii Production and gathering	T1	D	MEM/UNSD	T1	D	MEM/UNSD	T1	D	MEM/UNSD
1.B.2.b.iii Processing	T1	D	MEM/UNSD	T1	D	MEM/UNSD	NA	NA	NA
1.B.2.b.iv Transmission and storage	T1	D	MEM/UNSD	T1	D	MEM/UNSD	NA	NA	NA
1.B.2.b.v Distribution	T1	D	MEM/UNSD	T1	D	MEM/UNSD	NA	NA	NA
1.B.2.b.vi Other	NA	NA	NE	NA	NA	NE	NA	NA	NE

IPCC sector 1	CO ₂			CH ₄			N ₂ O		
Energy	Method applied	Emission factor (EF)	Activity data	Method applied	Emission factor (EF)	Activity data	Method applied	Emission factor (EF)	Activity data
1.B.2.c Venting and flaring									
1.B.2.c.i Venting	T1	D	MEM/UNSD	T1	D	MEM/UNSD	NA	NA	NA
1.B.2.c.ii Flaring	T1	D	MEM/UNSD	T1	D	MEM/UNSD	T1	D	MEM/UNSD
1.B.2.d Other	NA	NA	NO	NA	NA	NO	NA	NA	NO
1.C CO ₂ Transport and storage									
	NA	NA	NO	NA	NA	NA	NA	NA	NA
1.D Memo items									
1.D.1 International bunkers - Aviation	T1	D	MEM/UNSD	T1	D	MEM/UNSD	T1	D	MEM/UNSD
1.D.1 International bunkers - Navigation	T1	D	MEM/UNSD	T1	D	MEM/UNSD	T1	D	MEM/UNSD
1.D.2 Multilateral operations	NA	NA	NO	NA	NA	NO	NA	NA	NO
1.D.3 CO ₂ emissions from biomass	T1	D	MEM/UNSD	NA	NA	NA	NA	NA	NA
CO ₂ captured	NA	NA	NO	NA	NA	NO	NA	NA	NO
Waste incineration with energy recovery included	NA	NA	NO	NA	NA	NO	NA	NA	NO

1.2 Brief description of key categories

The identification of key categories (KCA) is prepared in accordance with 2006 IPCC Guidelines⁴. It stipulates that a key category is one that is prioritized within the National System because its estimate has a significant influence on a country's total inventory of greenhouse gases in terms of the absolute level of emissions or removals, the trend in emissions or removals, or both.

Key categories according to the following equation are those that, when summed together in descending order of magnitude, add up to 95% of the sum of all $L_{x,t}$ or any category meeting the 95% threshold in any year of the Level Assessment (LA) or in the Trend Assessment (TA) is considered a *key category*.

The identification of key categories consists in general of six steps. However, for the current submission a KCA no qualitative considerations were included.

- Identifying categories
 - See Annex I: Key categories in the following table is provided information on the level of disaggregation.
- Level Assessment excluding LULUCF (Approach 1) for 1990 and 2022
- Trend Assessment excluding LULUCF (Approach 1) for 1990 - 2022

1.2.1 Level of disaggregation and identification of key categories

Following *good practice* in determining the appropriate level of disaggregation of categories to identify key categories:

• The analysis is performed at the level of IPCC categories/subcategories at which the IPCC methods	✓
• Each greenhouse gas emitted from each category is considered separately.	✓
• An analysis should be performed for emissions and removals separately within a given category.	✓

1.2.2 Level Assessment

The 2006 IPCC Guidelines Tier 1 approach has been applied: contribution of each source or sink category to the total national inventory.

Equation 4.1: Level Assessment (2006 IPCC GL, Vol. 1, Chap. 4.3.1)

$$\text{Key category level assessment} = \frac{|\text{source or sink category estimate}|}{|\text{total contribution}|} \Rightarrow L_{x,t} = \frac{|E_{x,t}|}{\sum |E_{y,t}|}$$

Where:

$L_{x,t}$ = level assessment for source or sink x in latest inventory year (year t)

$|E_{x,t}|$ = absolute value of emission or removal estimate of source or sink category x in year t

$\sum |E_{y,t}|$ = total contribution, which is the sum of the absolute values of emissions and removals in year t calculated using the aggregation level chosen by the country for key category analysis. Because both emissions and removals are entered with positive sign, the total contribution/level can be larger than a country's total emissions less removals

⁴ IPCC. (2006). *Methodological Choice and Identification of Key Categories. Volume 1 - General Guidance and Reporting, Chapter 4.*

1.2.3 Trend Assessment

The 2006 IPCC Guidelines Tier 1 approach has been applied:

- The trend assessment identifies categories whose trend is different from the trend of the total inventory, regardless whether category trend is increasing or decreasing, or is a sink or source.
- Categories whose trend diverges most from the total trend should be identified as **key**, when this difference is weighted by the level of emissions or removals of the category in the base year.

Equation 4.2: Trend assessment (2006 IPCC GL, Vol. 1, Chap. 4.3.1)

Key category Trend assessment = $T_{x,0} = \frac{|E_{x,0}|}{\sum_y |E_{y,0}|} \times \left| \left[\frac{(E_{x,t} - E_{x,0})}{|E_{x,0}|} \right] - \frac{\left(\sum_y E_{y,t} - \sum_y E_{y,0} \right)}{\sum_y |E_{y,0}|} \right|$

Category Significance	Category Trend	Overall Trend
--------------------------	-------------------	------------------

Where:

- $T_{x,0}$ = trend assessment of source or sink category x in year t as compared to the base year (year 0)
- $|E_{x,0}|$ = absolute value of emission or removal estimate of source or sink category x in year 0
- $E_{x,t}$ and $E_{x,0}$ = real values of estimates of source or sink category x in years t and 0, respectively
- $\sum_y E_{y,t}$ and $\sum_y E_{y,0}$ = total inventory estimates in years t and 0, respectively

1.2.4 Results of the Key Categories Analysis (KCA) without LULUCF for 1990 and 2022

The key categories without LULUCF (determined by Tier 1 methodology) comprise 76,823.49 kt CO₂eq in the year 2022, which corresponds to 95.1% of the total greenhouse gas emissions (without LULUCF) of Algeria.

Out of the 38 identified key categories, 27 of them were sources of CO₂ emissions and contributed most to the key category emissions: 23 sources of CO₂ emissions from IPCC sector Energy and 4 sources of CO₂ emissions from CRT sector Industrial Processes and Product Use (IPPU). Eight (8) of the identified key categories were sources of CH₄ emissions: 3 sources of CH₄ emissions from CRT sector Energy, 5 sources of CH₄ emissions from CRT sector Agriculture and 1 source of CH₄ emissions from CRT sector Waste. Two (2) of the identified key categories were sources of N₂O emissions, one from CRT sector IPPU and one from CRT sector Agriculture. None of the identified key categories were sources of HFC or SF₆ emissions.

Table 1-4 Overview of Key Categories Analysis (KCA) excluding LULUCF.

	Number of key categories					
	CO ₂	CH ₄	N ₂ O	HFC	SF ₆	Total
Energy	23	3	0	-	-	26
IPPU	4	0	1	0	0	5
Agriculture	0	5	1	0	0	6
Waste	0	1	0	0	0	1
TOTAL	27	9	2	0	0	38

In 2022, the following nine IPCC categories contribute already 67% to the total GHG emissions excluding LULUCF (level assessment):

- CH₄ from category 1.B.2.b Fugitive emission from segment Natural gas
- CO₂ from gaseous fuels from category 1.A.1.a Public Electricity and Heat Production
- CO₂ from gaseous fuels from category 1.A.1.c.iii Other energy industries
- CO₂ from diesel oil from category 1.A.3.b Road transportation
- CO₂ from gasoline from category 1.A.3.b Road transportation
- CO₂ from category from 1.B.2.c Fugitive emission from segment Venting and flaring
- CO₂ from liquid fuels from category 1.A.4.b Residential
- CO₂ from category 2.C.1 Iron and Steel Production

The following table presents the results of the KCA Tier 1 by indicating the ranking of the different subcategories as well as emissions.

Table 1-5 Tier 1 - Key Categories Analysis (KCA): Ranking excluding LULUCF

IPCC Code	IPCC Category	GHG	Level Assessment		Trend Assessment	Base Year (1990) Estimate E _{x,0}	Latest Year (2022) Estimate E _{x,t}	Share Latest Year (2022)
			1990	2022	1990-2022	kt CO ₂ -equivalent		
1 A 1 a gaseous	Public Electricity and Heat Production	CO ₂	2	1	2	9,266	41,553	17.3%
1 A 1 a liquid	Public Electricity and Heat Production	CO ₂	26			413	640	0.3%

National circumstances, institutional arrangements and cross-cutting information

QA/QC Plan

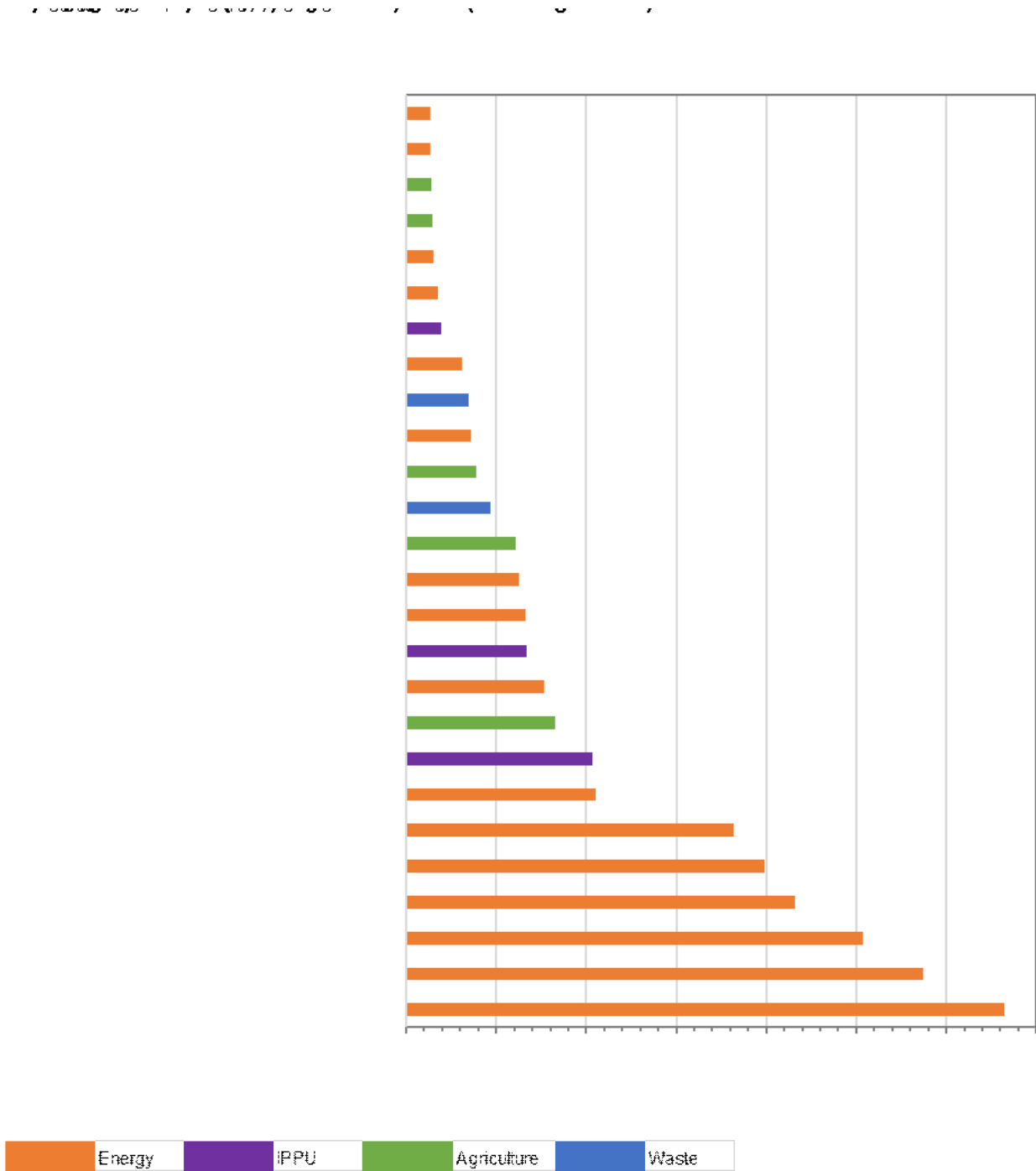
IPCC Code	IPCC Category	GHG	Level Assessment		Trend Assessment	Base Year (1990) Estimate E _{x,0}	Latest Year (2022) Estimate E _{x,t}	Share Latest Year (2022)
1 A 1 b gaseous	Petroleum Refining	CO ₂	17	19	12	1,139	3,110	1.3%
1 A 1 c 1 solid	Manufacture of solid fuels	CO ₂	21			565	NO	NO
1 A 1 c 2 gaseous	Oil and gas extraction	CO ₂		5		IE	18,061	7.5%
1 A 1 c 3 gaseous	Other energy industries	CO ₂	3	11	5	8,184	5,888	2.4%
1 A 2 a gaseous	Iron and Steel	CO ₂	25	20	18	418	3,080	1.3%
1 A 2 a solid	Iron and Steel	CO ₂				312	253	0.1%
1 A 2 e gaseous	Food processing, beverages and tobacco	CO ₂		25		IE	1,366	0.6%
1 A 2 f gaseous	Non-metallic minerals	CO ₂	12	8	9	2,129	8,356	3.5%
1 A 2 g 5 liquid	Construction	CO ₂		24		IE	1,386	0.6%
1 A 2 g 8 gaseous	Other	CO ₂		12		101	4,551	1.9%
1 A 2 g 8 liquid	Other	CO ₂	13		1	2,002	222	0.1%
1 A 3 a jet kerosene	Domestic aviation	CO ₂	22			477	752	0.3%
1 A 3 b diesel oil	Road transportation	CO ₂	4	2	4	6,956	26,383	11.0%
1 A 3 b gasoline	Road transportation	CO ₂	5	7	7	6,414	9,732	4.0%
1 A 3 b LPG	Road transportation	CO ₂		15		NO	3,821	1.6%
1 A 3 e gaseous	Other transportation	CO ₂		26		IE	1,275	0.5%
1 A 4 a gaseous	Commercial/institutional	CO ₂		17		IE	3,275	1.4%
1 A 4 a liquid	Commercial/institutional	CO ₂		23		IE	1,572	0.7%
1 A 4 b gaseous	Residential	CO ₂	10	4	6	2,455	24,101	10.0%
1 A 4 b liquid	Residential	CO ₂	7	16		3,392	3,648	1.5%
1 B 2 a	Oil	CH ₄				356	515	0.2%
1 B 2 b	Natural gas	CH ₄	1	3	3	10,726	24,986	10.4%
1 B 2 c	Venting and flaring	CO ₂	6	10	17	5,870	6,284	2.6%
1 B 2 c	Venting and flaring	CH ₄	19			986	1,056	0.4%
2 A 1	Cement production	CO ₂	11	6	8	2,143	12,836	5.3%
2 B 1	Ammonia Production	CO ₂	20	13	14	622	4,321	1.8%
2 B 2	Nitric Acid Production	N ₂ O			11	381	96	0.0%
2 B 8	Petrochemical and Carbon Black Production	CO ₂			20	159	55	0.0%
2 C 1	Iron and Steel Production	CO ₂	8	14	13	3,316	4,071	1.7%
3 A 1	Cattle	CH ₄	14	21		1,946	1,876	0.8%
3 A 2	Sheep	CH ₄	9	18	16	2,668	3,243	1.3%
3 A 4 d	Goats	CH ₄	23			451	643	0.3%
3 A 4 f	Mules and asses	CH ₄			21	84	22	0.0%
3 B 1	Cattle	CH ₄	24			441	544	0.2%
3 D 1 b	Organic N fertilizers	N ₂ O	16	22	19	1,239	1,673	0.7%
5 A	Solid waste disposal	CH ₄	15	9	10	1,494	8,014	3.3%

In the following table and figure, the results of the Key Categories Analysis (KCA) without LULUCF for 1990 and 2022 as well as the Trend assessment for the period 1990 – 2022 are provided.

Table 1-6 Level Assessment: Key categories without LULUCF 1990

Level Assessment - 1990		GHG	Year 1990 Estimate	Level Assessment $L_{x,t}$	Cumulative Total of $L_{x,t}$
IPCC Code	IPCC Category		Ex,t kt CO ₂ -equivalent		
1 B 2 b	Natural gas	CH ₄	10,726.42	13.3%	13.3%
1 A 1 a gaseous	Public Electricity and Heat Production	CO ₂	9,266.35	11.5%	24.8%
1 A 1 c 3 gaseous	Other energy industries	CO ₂	8,184.46	10.1%	34.9%
1 A 3 b diesel oil	Road transportation	CO ₂	6,956.41	8.6%	43.5%
1 A 3 b gasoline	Road transportation	CO ₂	6,413.70	7.9%	51.4%
1 B 2 c	Venting and flaring	CO ₂	5,869.55	7.3%	58.7%
1 A 4 b liquid	Residential	CO ₂	3,392.04	4.2%	62.9%
2 C 1	Iron and Steel Production	CO ₂	3,316.24	4.1%	67.0%
3 A 2	Sheep	CH ₄	2,667.72	3.3%	70.3%
1 A 4 b gaseous	Residential	CO ₂	2,454.98	3.0%	73.4%
2 A 1	Cement production	CO ₂	2,143.12	2.7%	76.0%
1 A 2 f gaseous	Non-metallic minerals	CO ₂	2,128.77	2.6%	78.7%
1 A 2 g 8 liquid	Other	CO ₂	2,002.49	2.5%	81.1%
3 A 1	Cattle	CH ₄	1,946.10	2.4%	83.5%
5 A	Solid waste disposal	CH ₄	1,493.63	1.8%	85.4%
3 D 1 b	Organic N fertilizers	N ₂ O	1,238.65	1.5%	86.9%
1 A 1 b gaseous	Petroleum Refining	CO ₂	1,139.10	1.4%	88.3%
5 D	Wastewater treatment and discharge	CH ₄	1,111.11	1.4%	89.7%
1 B 2 c	Venting and flaring	CH ₄	986.03	1.2%	90.9%
2 B 1	Ammonia Production	CO ₂	621.93	0.8%	91.7%
1 A 1 c 1 solid	Manufacture of solid fuels	CO ₂	565.26	0.7%	92.4%
1 A 3 a jet kerosene	Domestic aviation	CO ₂	477.32	0.6%	93.0%
3 A 4 d	Goats	CH ₄	450.68	0.6%	93.6%
3 B 1	Cattle	CH ₄	440.62	0.5%	94.1%
1 A 2 a gaseous	Iron and Steel	CO ₂	418.18	0.5%	94.6%
1 A 1 a liquid	Public Electricity and Heat Production	CO ₂	412.65	0.5%	95.1%

Figure 1-2 Key Categories excluding LULUCF for 1990



Energy IPPU Agriculture Waste

Table 1-7 Level Assessment: Key categories without LULUCF 2022

Level Assessment - 2020		GHG	Year 2020 Estimate	Level Assessment	Cumulative Total of
IPCC Code	IPCC Category		Ex,t kt CO ₂ -equivalent		
1 A 1 a gaseous	Public Electricity and Heat Production	CO ₂	41,552.99	17.3%	17.3%
1 A 3 b diesel oil	Road transportation	CO ₂	26,382.91	11.0%	28.3%
1 B 2 b	Natural gas	CH ₄	24,985.69	10.4%	38.7%
1 A 4 b gaseous	Residential	CO ₂	24,101.38	10.0%	48.7%
1 A 1 c 2 gaseous	Oil and gas extraction	CO ₂	18,061.20	7.5%	56.2%
2 A 1	Cement production	CO ₂	12,836.50	5.3%	61.5%
1 A 3 b gasoline	Road transportation	CO ₂	9,732.48	4.0%	65.6%
1 A 2 f gaseous	Non-metallic minerals	CO ₂	8,356.10	3.5%	69.1%
5 A	Solid waste disposal	CH ₄	8,013.87	3.3%	72.4%
1 B 2 c	Venting and flaring	CO ₂	6,283.94	2.6%	75.0%
1 A 1 c 3 gaseous	Other energy industries	CO ₂	5,887.59	2.4%	77.5%
1 A 2 g 8 gaseous	Other	CO ₂	4,550.94	1.9%	79.3%
2 B 1	Ammonia Production	CO ₂	4,320.79	1.8%	81.1%
2 C 1	Iron and Steel Production	CO ₂	4,071.17	1.7%	82.8%
1 A 3 b LPG	Road transportation	CO ₂	3,821.21	1.6%	84.4%
1 A 4 b liquid	Residential	CO ₂	3,648.03	1.5%	85.9%
1 A 4 a gaseous	Commercial/institutional	CO ₂	3,275.29	1.4%	87.3%
3 A 2	Sheep	CH ₄	3,242.64	1.3%	88.7%
1 A 1 b gaseous	Petroleum Refining	CO ₂	3,109.74	1.3%	89.9%
1 A 2 a gaseous	Iron and Steel	CO ₂	3,079.96	1.3%	91.2%
3 A 1	Cattle	CH ₄	1,876.29	0.8%	92.0%
3 D 1 b	Organic N fertilizers	N ₂ O	1,673.31	0.7%	92.7%
1 A 4 a liquid	Commercial/institutional	CO ₂	1,572.31	0.7%	93.4%
1 A 2 g 5 liquid	Construction	CO ₂	1,385.70	0.6%	93.9%
1 A 2 e gaseous	Food processing, beverages and tobacco	CO ₂	1,366.47	0.6%	94.5%
1 A 3 e gaseous	Other transportation	CO ₂	1,275.13	0.5%	95.0%

Figure 1-3 Key Categories excluding LULUCF for 2022

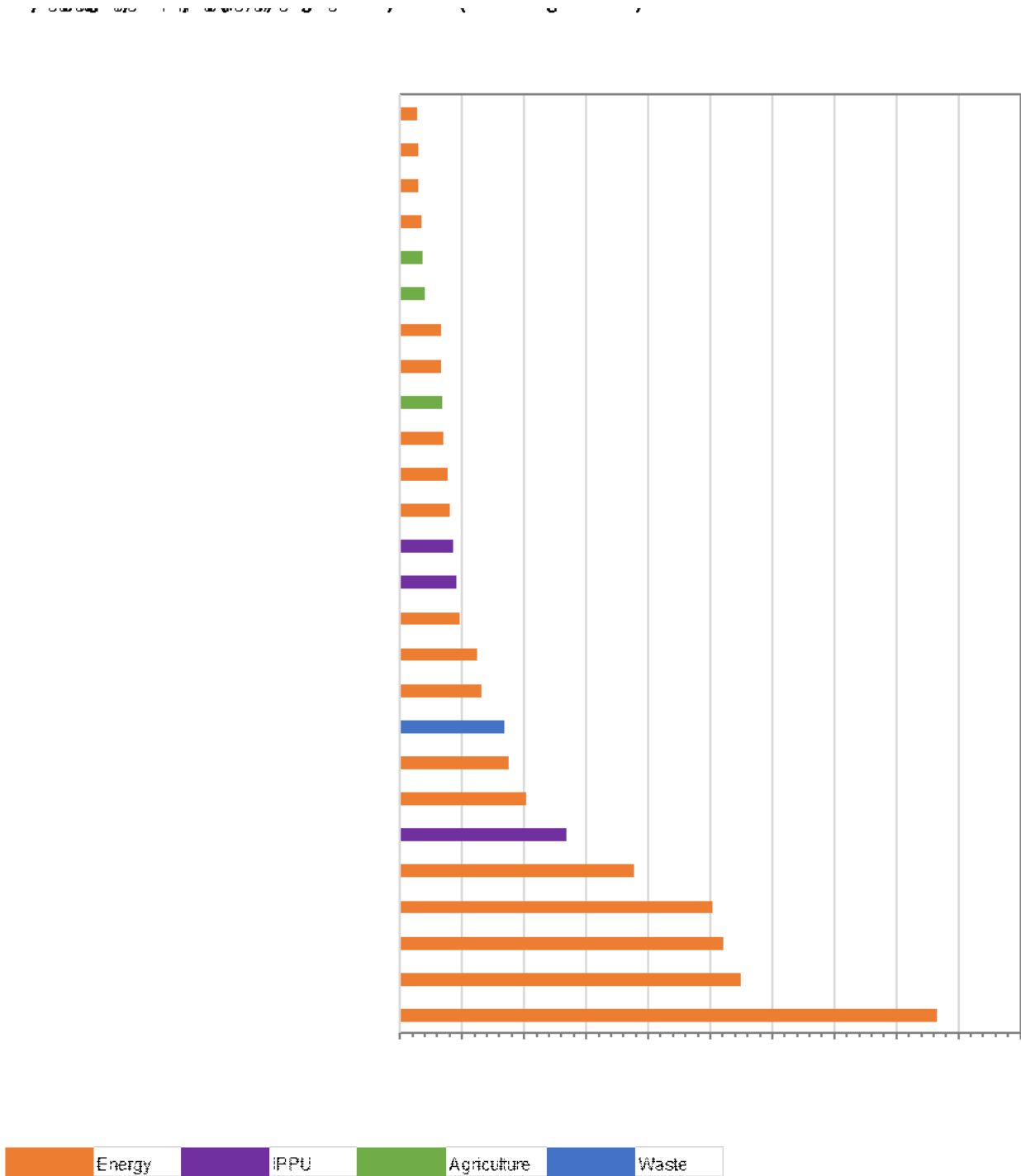
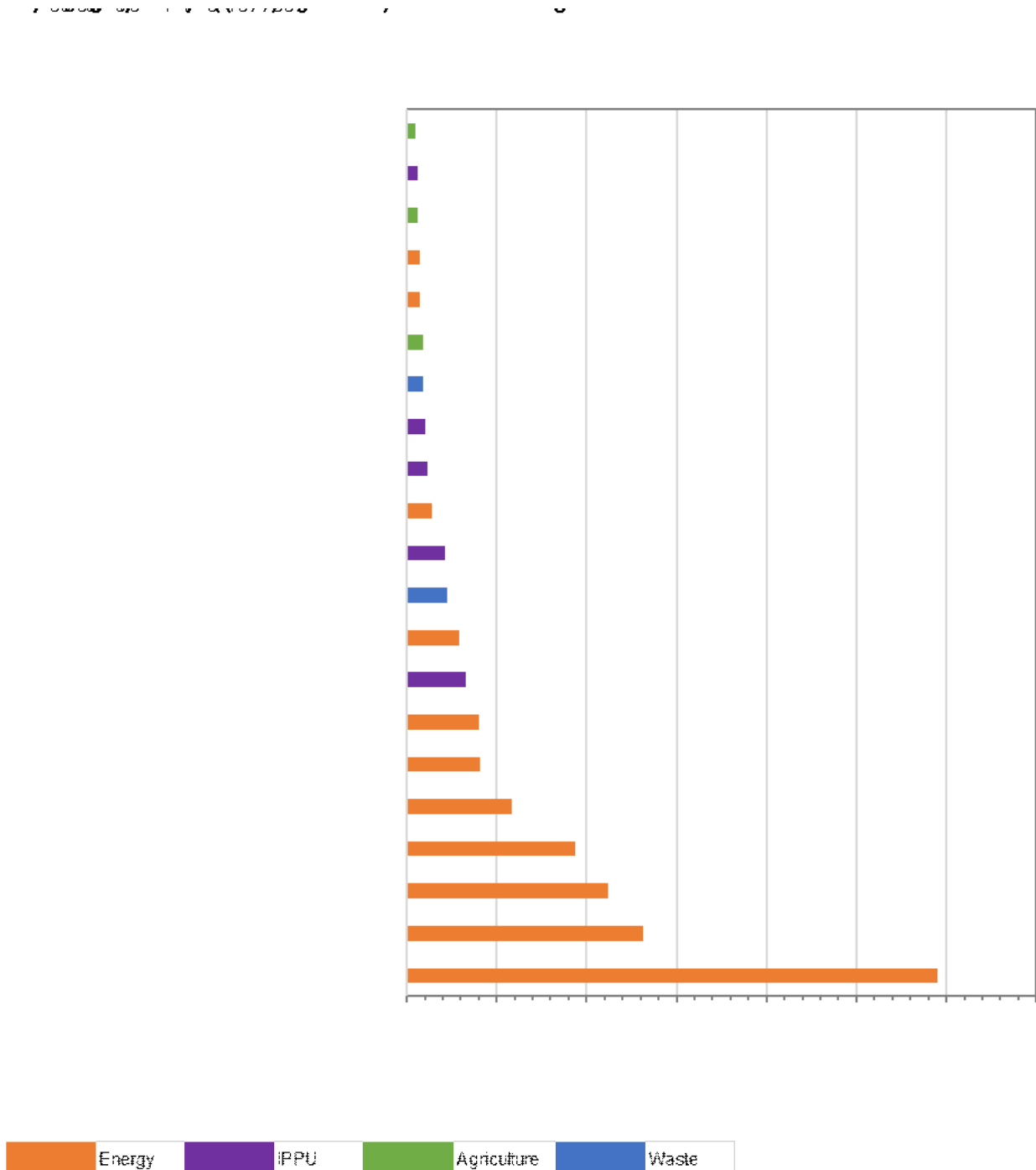


Table 1-8 Trend Assessment: Key categories without LULUCF 2022

Trend Assessment		GHG	Base Year (1990) Estimate $E_{x,0}$	Latest Year (2022) Estimate $E_{x,t}$	Trend Assessment $L_{x,t}$	% Contribution to the trend	Cumulative Total of $L_{x,t}$
IPCC Code	IPCC Category		kt CO ₂ -equivalent		$L_{x,t}$		
1 A 2 g (m) liquid	Other	CO ₂	2,002.49	222.32	0.200	29.4%	29.4%
1 A 1 a gaseous	Public Electricity and Heat Production	CO ₂	9,266.35	41,552.99	0.089	13.1%	42.5%
1 B 2 b	Natural gas	CH ₄	10,726.42	24,985.69	0.076	11.1%	53.7%
1 A 3 b diesel oil	Road transportation	CO ₂	6,956.41	26,382.91	0.063	9.3%	63.0%
1 A 1 c iii gaseous	Other energy industries	CO ₂	8,184.46	5,887.59	0.040	5.8%	68.8%
1 A 4 b gaseous	Residential	CO ₂	2,454.98	24,101.38	0.027	4.0%	72.8%
1 A 3 b gasoline	Road transportation	CO ₂	6,413.70	9,732.48	0.027	4.0%	76.8%
2 A 1	Cement production	CO ₂	2,143.12	12,836.50	0.022	3.2%	80.1%
1 A 2 f gaseous	Non-metallic minerals	CO ₂	2,128.77	8,356.10	0.020	2.9%	83.0%
5 A	Solid waste disposal	CH ₄	1,493.63	8,013.87	0.015	2.2%	85.2%
2 B 2	Nitric Acid Production	N ₂ O	380.59	96.06	0.014	2.1%	87.3%
1 A 1 b gaseous	Petroleum Refining	CO ₂	1,139.10	3,109.74	0.009	1.3%	88.6%
2 C 1	Iron and Steel Production	CO ₂	3,316.24	4,071.17	0.008	1.1%	89.7%
2 B 1	Ammonia Production	CO ₂	622	4,320.79	0.007	1.0%	90.7%
5 C	Incineration and open burning of waste	CO ₂	359	154.95	0.006	0.9%	91.5%
3 A 2	Sheep	CH ₄	2,668	3,242.64	0.006	0.9%	92.4%
1 B 2 c	Venting and flaring	CO ₂	5,870	6,283.94	0.005	0.7%	93.1%
1 A 2 a gaseous	Iron and Steel	CO ₂	418	3,079.96	0.004	0.7%	93.8%
3 D 1 b	Organic N fertilizers	N ₂ O	1,239	1,673.31	0.004	0.6%	94.3%
2 B 8	Petrochemical and Carbon Black Production	CO ₂	159	54.57	0.004	0.6%	94.9%
3 A 4 f	Mules and asses	CH ₄	84	22.38	0.003	0.5%	95.4%

Figure 1-4 Key Categories excluding LULUCF - Trend Assessment



Energy	IPPU	Agriculture	Waste
--------	------	-------------	-------

1.2.5 Results of the Key Categories Analysis (KCA) including LULUCF for 1990 - 2022

The key categories with LULUCF are determined by Tier 1 methodology.

Out of the 38 identified key categories, 28 of them were sources of CO₂ emissions and contributed most to the key category emissions: 24 sources of CO₂ emissions from CRT sector Energy and 1 sources of CO₂ emissions from CRT sector Industrial Processes and Product Use (IPPU), two (2) from CRT sector LULUCF and one 1) from CRT sector Waste. Eight (8) of the identified key categories were sources of CH₄ emissions: 2 sources of CH₄ emissions from CRT sector Energy, 4 sources of CH₄ emissions from CRT sector Agriculture and 2 sources of CH₄ emissions from IPCC sector Waste. Two (2) of the identified key categories were sources of N₂O emissions, one from IPCC sector Agriculture and one from IPCC sector IPPU. None of the identified key categories were sources of HFC or SF₆ emissions.

Table 1-9 Overview of Key Categories Analysis (KCA) including LULUCF.

	Number of key categories					
	CO ₂	CH ₄	N ₂ O	HFC	SF ₆	Total
Energy	24	2	0	0	0	26
IPPU	1	0	1	0	0	2
Agriculture	0	4	1	0	0	5
LULUCF	2	0	0	0	0	2
Waste	1	2	0	0	0	3
TOTAL	28	8	2	0	0	38

The following table presents the results of the KCA Tier 1 by indicating the ranking of the different subcategories as well as emissions.

Table 1-10 Tier 1 - Key Categories Analysis (KCA): Ranking including LULUCF.

IPCC Code	IPCC Category	GHG	Level Assessment		Trend Assessment	Base Year (1990) Estimate E _{x,0}	Latest Year (2022) Estimate Ex, t
			1990	2022	1990-2022	kt CO ₂ -equivalent	
1 A 1 a gaseous	Public Electricity and Heat Production	CO ₂	2	1	2	9,266	41,553
1 A 1 b gaseous	Petroleum Refining	CO ₂	18	20	14	1,139	3,110
1 A 1 c 1 solid	Manufacture of solid fuels	CO ₂	23			565	NO
1 A 1 c 2 gaseous	Oil and gas extraction	CO ₂		5		IE	18,061
1 A 1 c 3 gaseous	Other energy industries	CO ₂	3	12	5	8,184	5,888
1 A 2 a gaseous	Iron and Steel	CO ₂	27	21	20	418	3,080
1 A 2 e gaseous	Food processing, beverages and tobacco	CO ₂		27		IE	1,366
1 A 2 f gaseous	Non-metallic minerals	CO ₂	13	9	10	2,129	8,356
1 A 2 g 5 liquid	Construction	CO ₂		25		IE	1,386
1 A 2 g 8 gaseous	Other	CO ₂		13		101	4,551
1 A 2 g 8 liquid	Other	CO ₂	14		1	2,002	222
1 A 3 a jet kerosene	Domestic aviation	CO ₂	24			477	752
1 A 3 b diesel oil	Road transportation	CO ₂	5	2	4	6,956	26,383

IPCC Code	IPCC Category	GHG	Level Assessment		Trend Assessment	Base Year (1990) Estimate E _{x,0}	Latest Year (2022) Estimate E _{x,t}
1 A 3 b gasoline	Road transportation	CO ₂	6	8	7	6,414	9,732
1 A 3 b LPG	Road transportation	CO ₂		16		NO	3,821
1 A 3 e gaseous	Other transportation	CO ₂		28		IE	1,275
1 A 4 a gaseous	Commercial/institutional	CO ₂		18		IE	3,275
1 A 4 a liquid	Commercial/institutional	CO ₂		24		IE	1,572
1 A 4 b gaseous	Residential	CO ₂	11	4	6	2,455	24,101
1 A 4 b liquid	Residential	CO ₂	8	17		3,392	3,648
1 B 2 b	Natural gas	CH ₄	1	3	3	10,726	24,986
1 B 2 c	Venting and flaring	CO ₂	7	11	19	5,870	6,284
1 B 2 c	Venting and flaring	CH ₄	20			986	1,056
2 A 1	Cement production	CO ₂	12	6	8	2,143	12,836
2 A 3	Glass Production	CO ₂			13	6	2
2 B 1	Ammonia Production	CO ₂	22	14	16	622	4,321
2 B 2	Nitric Acid Production	N ₂ O			12	381	96
2 C 1	Iron and Steel Production	CO ₂	9	15	15	3,316	4,071
3 A 1	Cattle	CH ₄	15	22		1,946	1,876
3 A 2	Sheep	CH ₄	10	19	18	2,668	3,243
3 A 4 d	Goats	CH ₄	25			451	643
3 B 1	Cattle	CH ₄	26			441	544
3 D 1 b	Organic N fertilizers	N ₂ O	17	23	22	1,239	1,673
4 A 1	Forest land remaining forest land	CO ₂	4	7	9	8,079	10,149
4 B 1	Cropland remaining cropland	CO ₂	21	26	21	662	1,379
5 A	Solid waste disposal	CH ₄	16	10	11	1,494	8,014
5 C	Incineration and open burning of waste	CO ₂			17	359	155
5 D	Wastewater treatment and discharge	CH ₄	19			1,111	1,084

In the following table and figure, the results of the Key Categories Analysis (KCA) including LULUCF for 1990 and 2022 as well as the Trend assessment for the period 1990 – 2022 are provided.

Table 1-11 Level Assessment: Key categories including LULUCF 1990

Level Assessment - 1990		GHG	Year 1990 Estimate Ex,t	Absolute value of Year 2022 Estimate Ex,t	Level Assessment Lx,t	Cumulati ve Total of Lx,t
IPCC Code	IPCC Category		kt CO2-equivalent			
1 B 2 b	Natural gas	CH4	10,726	10,726	12.0%	12.0%
1 A 1 a gaseous	Public Electricity and Heat Production	CO2	9,266	9,266	10.3%	22.3%
1 A 1 c 3 gaseous	Other energy industries	CO2	8,184	8,184	9.1%	31.5%

Level Assessment - 1990		GHG	Year 1990 Estimate	Absolute value of	Level Assessment	Cumulative Total of
IPCC Code	IPCC Category		Ex,t	Year 2022 Estimate		
			kt CO ₂ -equivalent			
4 A 1	Forest land remaining forest land	CO ₂	-8,079	8,079	9.0%	40.5%
1 A 3 b diesel oil	Road transportation	CO ₂	6,956	6,956	7.8%	48.2%
1 A 3 b gasoline	Road transportation	CO ₂	6,414	6,414	7.2%	55.4%
1 B 2 c	Venting and flaring	CO ₂	5,870	5,870	6.6%	62.0%
1 A 4 b liquid	Residential	CO ₂	3,392	3,392	3.8%	65.7%
2 C 1	Iron and Steel Production	CO ₂	3,316	3,316	3.7%	69.4%
3 A 2	Sheep	CH ₄	2,668	2,668	3.0%	72.4%
1 A 4 b gaseous	Residential	CO ₂	2,455	2,455	2.7%	75.2%
2 A 1	Cement production	CO ₂	2,143	2,143	2.4%	77.6%
1 A 2 f gaseous	Non-metallic minerals	CO ₂	2,129	2,129	2.4%	79.9%
1 A 2 g (m) liquid	Other	CO ₂	2,002	2,002	2.2%	82.2%
3 A 1	Cattle	CH ₄	1,946	1,946	2.2%	84.3%
5 A	Solid waste disposal	CH ₄	1,494	1,494	1.7%	86.0%
3 D 1 b	Organic N fertilizers	N ₂ O	1,239	1,239	1.4%	87.4%
1.A.1.b gaseous	Petroleum Refining	CO ₂	1,139	1,139	1.3%	88.7%
5 D	Wastewater treatment and discharge	CH ₄	1,111	1,111	1.2%	89.9%
1 B 2 c	Venting and flaring	CH ₄	986	986	1.1%	91.0%
4 B 1	Cropland remaining cropland	CO ₂	-662	662	0.7%	91.7%
2 B 1	Ammonia Production	CO ₂	622	622	0.7%	92.4%
1 A 1 c 1 solid	Manufacture of solid fuels	CO ₂	565	565	0.6%	93.1%
1 A 3 a jet kerosene	Domestic aviation	CO ₂	477	477	0.5%	93.6%
3 A 4 d	Goats	CH ₄	451	451	0.5%	94.1%
3 B 1	Cattle	CH ₄	441	441	0.5%	94.6%
1 A 2 a gaseous	Iron and Steel	CO ₂	418	418	0.5%	95.1%

Figure 1-5 Key Categories including LULUCF for 1990

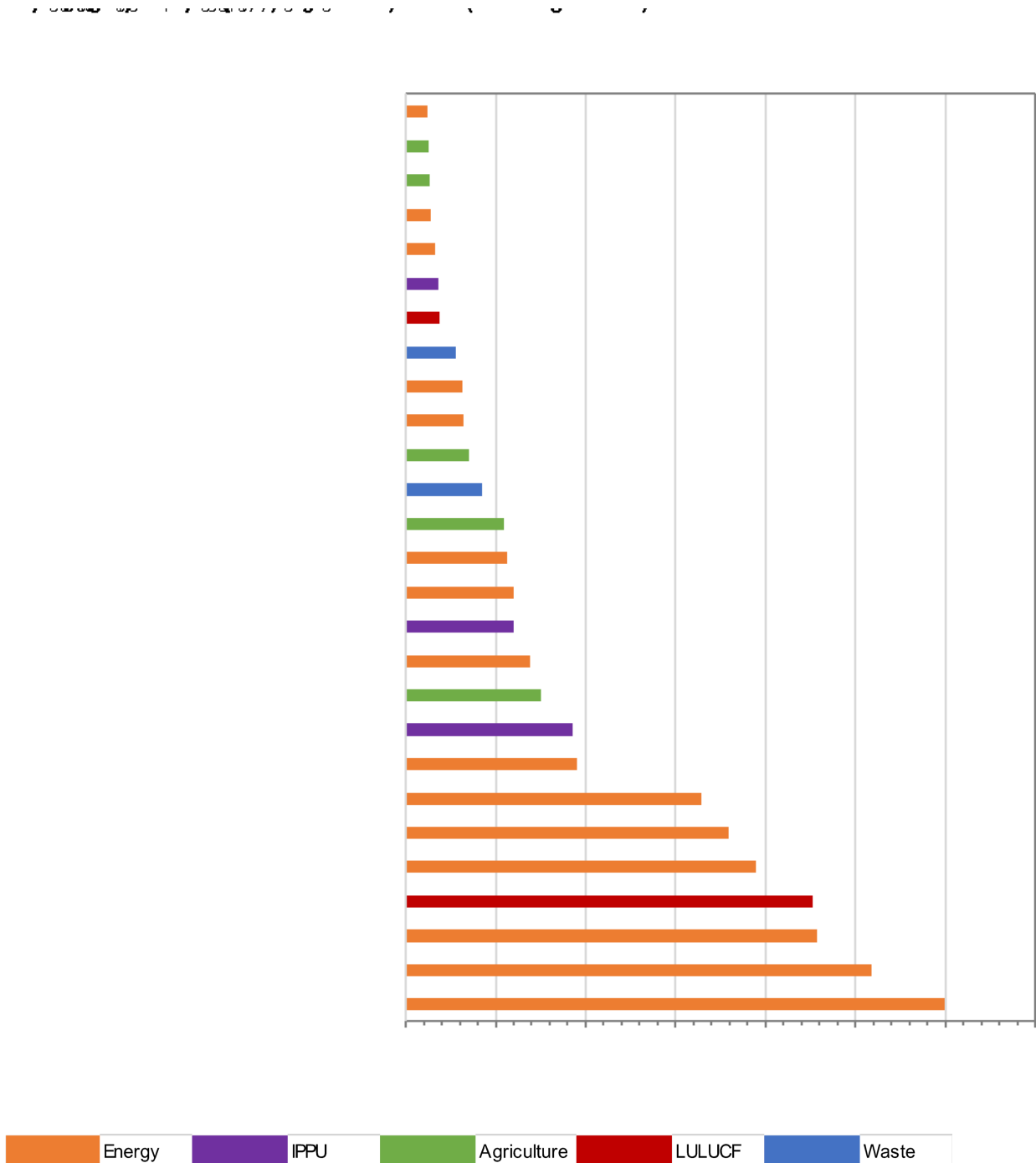


Table 1-12 Level Assessment: Key categories including LULUCF 2022

Level Assessment - 2022		GHG	Year 2022 Estimate Ex,t	Absolute value of Year 2022 Estimate Ex,t	Level Assessment L _{x,t}	Cumulative Total of L _{x,t}
IPCC Code	IPCC Category					
			kt CO ₂ -equivalent			
1 A 1 a gaseous	Public Electricity and Heat Production	CO ₂	41,553	41,553	16.5%	16.5%
1 A 3 b diesel oil	Road transportation	CO ₂	26,383	26,383	10.5%	27.0%
1 B 2 b	Natural gas	CH ₄	24,986	24,986	9.9%	36.9%
1 A 4 b gaseous	Residential	CO ₂	24,101	24,101	9.6%	46.4%
1 A 1 c 2 gaseous	Oil and gas extraction	CO ₂	18,061	18,061	7.2%	53.6%
2 A 1	Cement production	CO ₂	12,836	12,836	5.1%	58.7%
4 A 1	Forest land remaining forest land	CO ₂	-10,149	10,149	4.0%	62.7%
1 A 3 b gasoline	Road transportation	CO ₂	9,732	9,732	3.9%	66.6%
1 A 2 f gaseous	Non-metallic minerals	CO ₂	8,356	8,356	3.3%	69.9%
5 A	Solid waste disposal	CH ₄	8,014	8,014	3.2%	73.1%
1 B 2 c	Venting and flaring	CO ₂	6,284	6,284	2.5%	75.6%
1 A 1 c 3 gaseous	Other energy industries	CO ₂	5,888	5,888	2.3%	77.9%
1 A 2 g (m) gaseous	Other	CO ₂	4,551	4,551	1.8%	79.7%
2 B 1	Ammonia Production	CO ₂	4,321	4,321	1.7%	81.4%
2 C 1	Iron and Steel Production	CO ₂	4,071	4,071	1.6%	83.0%
1 A 3 b LPG	Road transportation	CO ₂	3,821	3,821	1.5%	84.6%
1 A 4 b liquid	Residential	CO ₂	3,648	3,648	1.4%	86.0%
1 A 4 a gaseous	Commercial/institutional	CO ₂	3,275	3,275	1.3%	87.3%
3 A 2	Sheep	CH ₄	3,243	3,243	1.3%	88.6%
1 A 1 b gaseous	Petroleum Refining	CO ₂	3,110	3,110	1.2%	89.8%
1 A 2 a gaseous	Iron and Steel	CO ₂	3,080	3,080	1.2%	91.1%
3 A 1	Cattle	CH ₄	1,876	1,876	0.7%	91.8%
3 D 1 b	Organic N fertilizers	N ₂ O	1,673	1,673	0.7%	92.5%
1 A 4 a liquid	Commercial/institutional	CO ₂	1,572	1,572	0.6%	93.1%
1 A 2 g 5 liquid	Construction	CO ₂	1,386	1,386	0.5%	93.6%
4 B 1	Cropland remaining cropland	CO ₂	1,379	1,379	0.5%	94.2%
1 A 2 e gaseous	Food processing, beverages and tobacco	CO ₂	1,366	1,366	0.5%	94.7%
1 A 3 e gaseous	Other transportation	CO ₂	1,275	1,275	0.5%	95.2%
1 A 1 a gaseous	Public Electricity and Heat Production	CO ₂	41,553	41,553	16.5%	16.5%
1 A 3 b diesel oil	Road transportation	CO ₂	26,383	26,383	10.5%	27.0%
1 B 2 b	Natural gas	CH ₄	24,986	24,986	9.9%	36.9%
1 A 4 b gaseous	Residential	CO ₂	24,101	24,101	9.6%	46.4%
1 A 1 c 2 gaseous	Oil and gas extraction	CO ₂	18,061	18,061	7.2%	53.6%
2 A 1	Cement production	CO ₂	12,836	12,836	5.1%	58.7%
4 A 1	Forest land remaining forest land	CO ₂	10,149	10,149	4.0%	62.7%

Level Assessment - 2022		GHG	Year 2022 Estimate	Absolute value of Year 2022 Estimate	Level Assessment L _{x,t}	Cumulative Total of L _{x,t}
IPCC Code	IPCC Category		Ex,t	Ex,t		
			kt CO ₂ -equivalent			
1 A 3 b gasoline	Road transportation	CO ₂	9,732	9,732	3.9%	66.6%
1 A 2 f gaseous	Non-metallic minerals	CO ₂	8,356	8,356	3.3%	69.9%
5 A	Solid waste disposal	CH ₄	8,014	8,014	3.2%	73.1%
1 B 2 c	Venting and flaring	CO ₂	6,284	6,284	2.5%	75.6%
1 A 1 c 3 gaseous	Other energy industries	CO ₂	5,888	5,888	2.3%	77.9%
1 A 2 g 8 gaseous	Other	CO ₂	4,551	4,551	1.8%	79.7%
2 B 1	Ammonia Production	CO ₂	4,321	4,321	1.7%	81.4%
2 C 1	Iron and Steel Production	CO ₂	4,071	4,071	1.6%	83.0%
1 A 3 b LPG	Road transportation	CO ₂	3,821	3,821	1.5%	84.6%
1 A 4 b liquid	Residential	CO ₂	3,648	3,648	1.4%	86.0%
1 A 4 a gaseous	Commercial/institutional	CO ₂	3,275	3,275	1.3%	87.3%
3 A 2	Sheep	CH ₄	3,243	3,243	1.3%	88.6%
1 A 1 b gaseous	Petroleum Refining	CO ₂	3,110	3,110	1.2%	89.8%
1 A 2 a gaseous	Iron and Steel	CO ₂	3,080	3,080	1.2%	91.1%
3 A 1	Cattle	CH ₄	1,876	1,876	0.7%	91.8%
3 D 1 b	Organic N fertilizers	N ₂ O	1,673	1,673	0.7%	92.5%
1 A 4 a liquid	Commercial/institutional	CO ₂	1,572	1,572	0.6%	93.1%
1 A 2 g 5 liquid	Construction	CO ₂	1,386	1,386	0.5%	93.6%
4 B 1	Cropland remaining cropland	CO ₂	-1,379	1,379	0.5%	94.2%
1 A 2 e gaseous	Food processing, beverages and tobacco	CO ₂	1,366	1,366	0.5%	94.7%
1 A 3 e gaseous	Other transportation	CO ₂	1,275	1,275	0.5%	95.2%

Figure 1-6 Key Categories including LULUCF for 2022

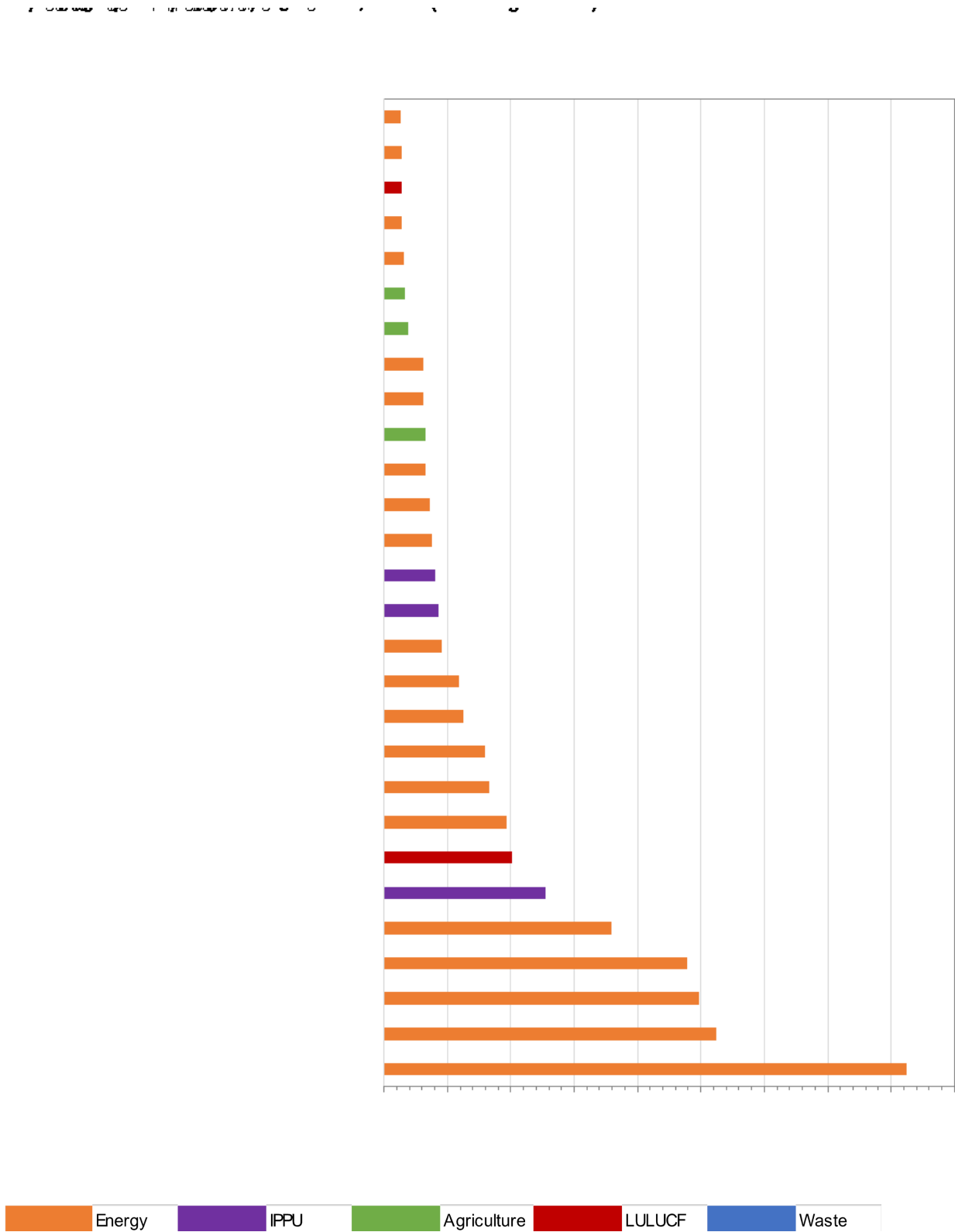
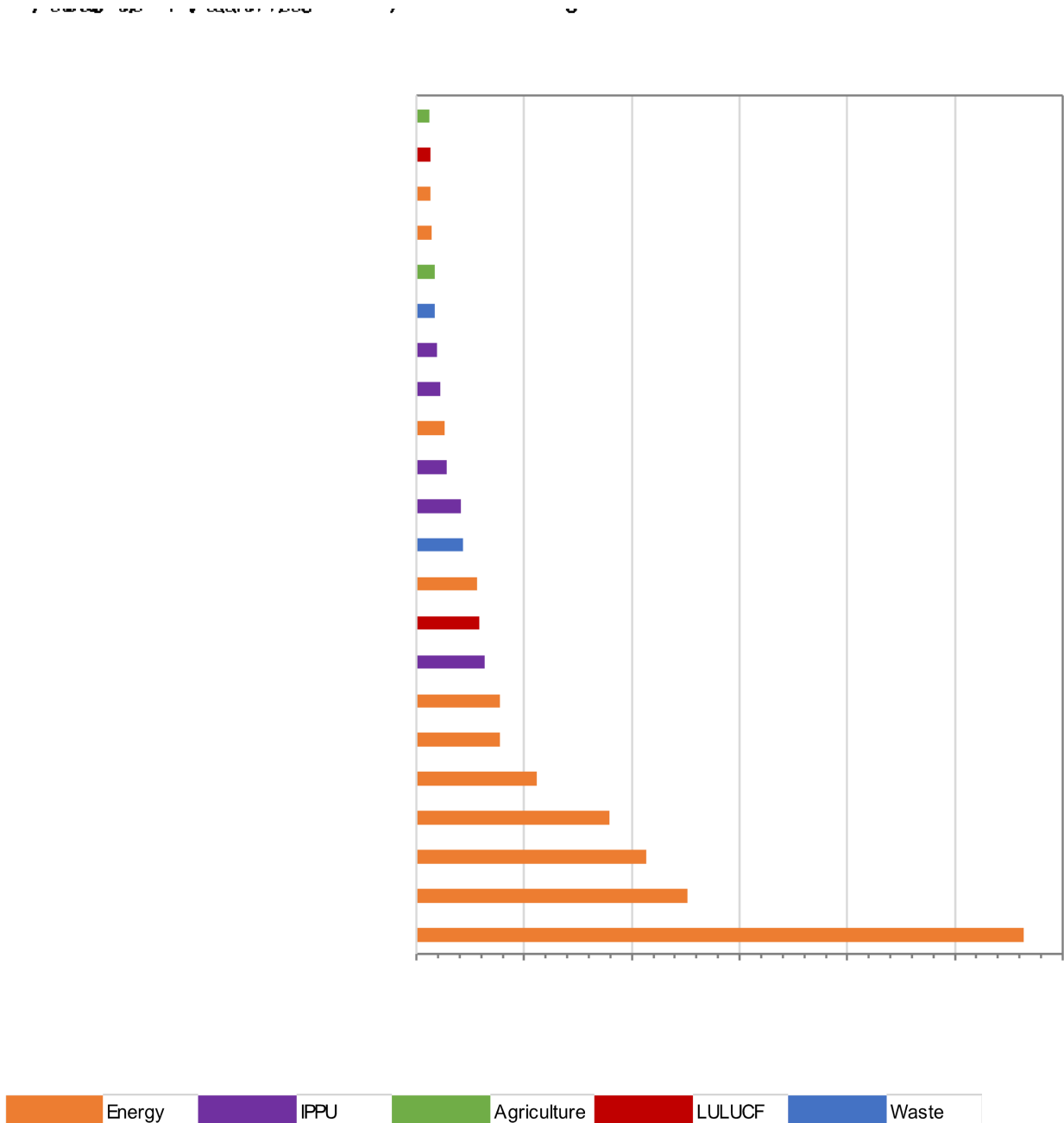


Table 1-13 Trend Assessment: Key categories including LULUCF 2022

Trend Assessment		GHG	Base Year (1990) Estimate $E_{x,0}$	Latest Year (2022) Estimate $E_{x,t}$	Trend Assessment $L_{x,t}$	% Contribution to the trend	Cumulative Total of $L_{x,t}$
IPCC Code	IPCC Category		kt CO ₂ -equivalent		$L_{x,t}$		
1 A 2 g 8 liquid	Other	CO ₂	2,002	222	0.180	28.1%	28.1%
1 A 1 a gaseous	Public Electricity and Heat Production	CO ₂	9,266	41,553	0.080	12.5%	40.7%
1 B 2 b	Natural gas	CH ₄	10,726	24,986	0.068	10.7%	51.3%
1 A 3 b diesel oil	Road transportation	CO ₂	6,956	26,383	0.057	8.9%	60.2%
1 A 1 c 3 gaseous	Other energy industries	CO ₂	8,184	5,888	0.036	5.6%	65.8%
1 A 4 b gaseous	Residential	CO ₂	2,455	24,101	0.025	3.8%	69.6%
1 A 3 b gasoline	Road transportation	CO ₂	6,414	9,732	0.024	3.8%	73.4%
2 A 1	Cement production	CO ₂	2,143	12,836	0.020	3.1%	76.6%
4 A 1	Forest land remaining forest land	CO ₂	-8,079	-10,149	0.018	2.9%	79.4%
1 A 2 f gaseous	Non-metallic minerals	CO ₂	2,129	8,356	0.018	2.8%	82.2%
5 A	Solid waste disposal	CH ₄	1,494	8,014	0.014	2.1%	84.3%
2 B 2	Nitric Acid Production	N ₂ O	381	96	0.013	2.0%	86.3%
2 A 3	Glass Production	CO ₂	6	2	0.009	1.3%	87.6%
1 A 1 b gaseous	Petroleum Refining	CO ₂	1,139	3,110	0.008	1.3%	88.9%
2 C 1	Iron and Steel Production	CO ₂	3,316	4,071	0.007	1.1%	90.0%
2 B 1	Ammonia Production	CO ₂	622	4,321	0.006	0.9%	90.9%
5 C	Incineration and open burning of waste	CO ₂	359	155	0.005	0.8%	91.7%
3 A 2	Sheep	CH ₄	2,668	3,243	0.005	0.8%	92.6%
1 B 2 c	Venting and flaring	CO ₂	5,870	6,284	0.004	0.7%	93.2%
1 A 2 a gaseous	Iron and Steel	CO ₂	418	3,080	0.004	0.6%	93.9%
4 B 1	Cropland remaining cropland	CO ₂	-662	-1,379	0.004	0.6%	94.5%
3 D 1 b	Organic N fertilizers	N ₂ O	1,239	1,673	0.004	0.6%	95.0%

Figure 1-7 Key Categories including LULUCF - Trend Assessment



1.3 Brief general description of QA/QC plan and implementation

The 2006 IPCC Guidelines set out the major elements of a QA/QC system to be implemented by inventory compilers/agency:

- (1) inventory agency is responsible for coordinating QA/QC activities, institutional and procedural arrangements for inventory activities and definition of roles and responsibilities.
- (2) a QA/QC plan,
- (3) general QC procedures (Tier 1) and source category-specific QC procedures (Tier 2)
- (4) QA and review procedures, and verification activities,
- (5) QA/QC system interaction with uncertainty analysis (see chapter on uncertainties),
- (6) reporting, documentation, and archiving.

The first steps to carry out **quality assurance (QA) and quality control (QC) procedures** have already been undertaken but need further improvement. The current status and planned improvements are described in the following sub-sections.

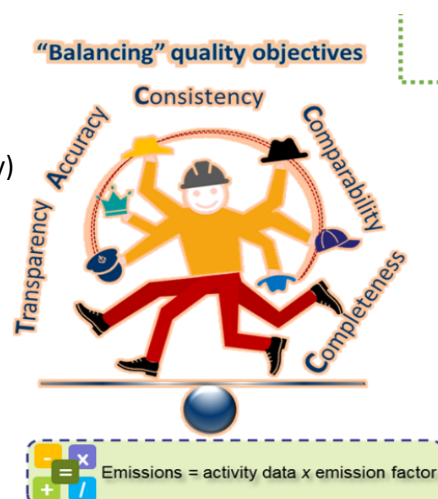
The inventory compiler should be responsible for coordinating the institutional and procedural arrangements for inventory activities.

1.3.1 QA/QC plan

As described in the 2006 IPCC Guidelines, Chapter 6.5, a **QA/QC plan** is a **fundamental element of a QA/QC and verification system**. The QA/QC plan should, in general, outline the QA/QC and verification activities that will be implemented and the institutional arrangements and responsibilities for implementing those activities. The plan should include a scheduled time frame for the QA/QC activities that follows inventory preparation from its initial development through to final reporting in any year.

The QA/QC plan is an internal document to organize and implement QA/QC and verification activities that ensure the inventory is fit for purpose and allow for improvement. Once developed, it can be referenced and used in subsequent inventory preparation, or modified as appropriate (notably, when changes in processes occur or on advice of independent reviewers). A key component of a QA/QC plan is the list of *data quality objectives*, against which an inventory can be measured in a review. Data quality objectives are concrete targets to be achieved in the inventory preparation. They should be appropriate, realistic (taking national circumstances into account) and allow for an improvement of the inventory. Where possible, data quality objectives should be measurable. Such data quality objectives may be based upon and refined from the following inventory principles:

- Timeliness
- Completeness
- Consistency (internal consistency as well as time series consistency)
- Comparability
- Accuracy
- Transparency
- Improvement



A **key component** of a QA/QC plan is the list of data **quality objectives**, against which an inventory can be measured in a review. However, a *good practice* approach is a pragmatic means of building inventories that are TACCC – and maintaining them in a manner that improves inventory quality over time. This means that the *good practice* approach reflects the national circumstances regarding financial and technical resources and capacities.

However, the GHG inventory - estimation of GHG emissions and removals including reporting elements - is subject to continuous improvement.

The QA/QC plan and the improvement of the GHG inventory follows a Plan-Do-Check-Act-Cycle (PDCA-cycle)⁵, which is an accepted model for pursuing a continual improvement of a process, product, or service according to international standards and is in line within the General Guidance and Reporting of the 2006 IPCC Guidelines.

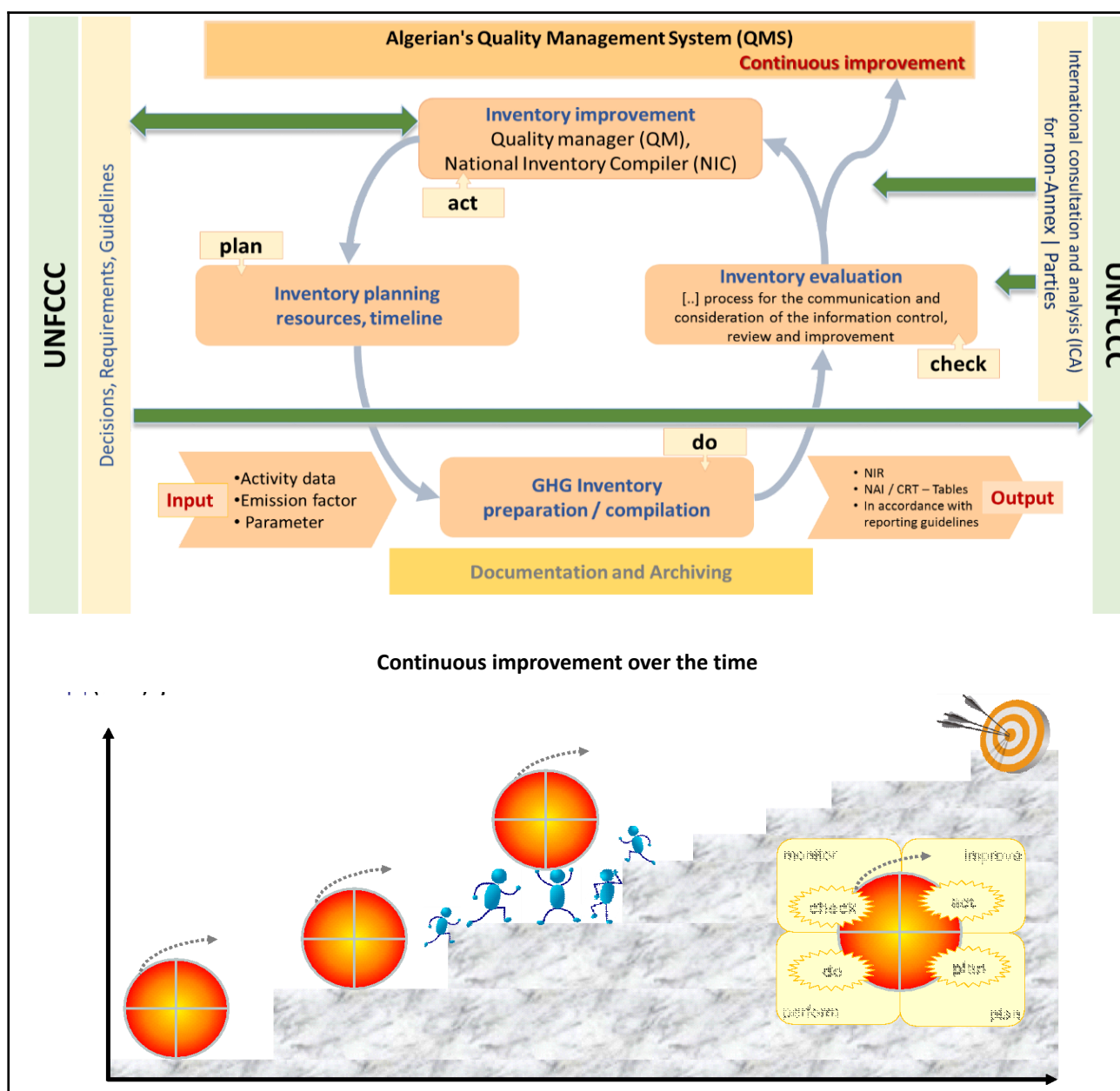


Figure 1-8 Continuous improvement

⁵ <https://asq.org/quality-resources/pdca-cycle>

1.3.2 Roles & responsibilities

the Expert Team *GHG Emission inventories* of ANCC is responsible for the preparation of Algeria's National Greenhouse Gas Inventory as well as for the preparation of the NIR. In the following table are the specific responsibilities for the preparation of the Algerian GHG inventory provided.

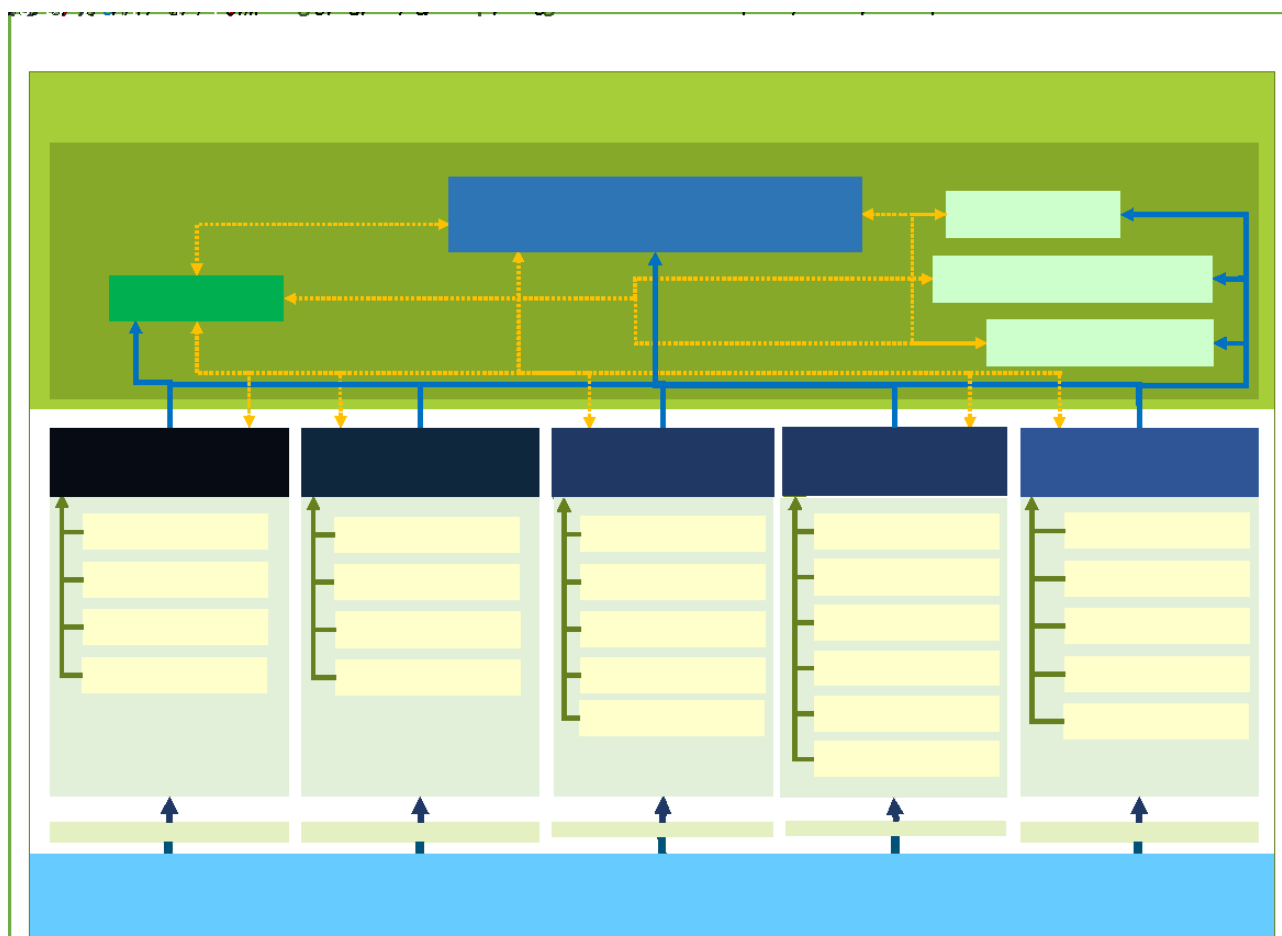


Figure 1-9 General data flow between roles and responsibilities

Table 1-14 Specific responsibilities for the preparation of the Algerian GHG inventory 1990 - 2022

Task / Role	Lead expert	Expert	QA Expert
National Inventory compiler (NIC)	Khalid Belabdi	Said Kaddour	Soumeya Amroune
QA/QC representative	Meriem Bech	Hind Bougherara	Soumeya Amroune
NIR coordinator	Hind Bougherara	Meriem Bech	Hamza Merabet
Energy - Stationary combustion	Said Kaddour	Khalid Belabdi	Hamza Merabet
Energy - Mobile combustion	Said Kaddour	Khalid Belabdi	Hamza Merabet
Energy - Fugitive emissions	Said Kaddour	Khalid Belabdi	Hamza Merabet
Industrial processes and product use (IPPU)	Khalid Belabdi	Said Kaddour	Hamza Merabet
Agriculture	Soumeya Amroune	Hind Bougherara	Meriem Bech
LULUCF	Hind Bougherara	Soumeya Amroune	Hamza Merabet
Waste	Meriem Bech	Said Kaddour	Hind Bougherara
Key Category Analysis	Hind Bougherara	Khalid Belabdi	Said Kaddour
Uncertainty Analysis	Hind Bougherara	Said Kaddour	Khalid Belabdi
Data management	Khalid Belabdi	Meriem Bech	Hind Bougherara

Task / Role	Expert
NID QA	Ménouër Boughedaoui
UNDP Project coordinator TCN&BUR1	Chérif Aoudjit
UNDP National Expert - GHG inventory and MRV	Hamza Merabet
UNDP International Expert - GHG inventory and MRV	Traute Köther (Austria)

In the following table a short overview is provided about the main tasks of each role.

Table 1-15 Task and responsibilities within the Algerian GHG inventory 1990 - 2022

Role	Task and responsibilities
National Inventory compiler (NIC)	- Supervision of inventory preparation process, - Compilation of reporting tables - Management of 'MRV GHG inventory' - implements QA/QC procedures on a national level
QA/QC representative	- Overall responsibility for the preparation Quality managements system (QMS) of the Algerian GHG inventory - Maintaining the Quality managements system (QMS) of the Algerian GHG inventory - Development and updating checklists (e.g., checklist for general QC checks) - Performing quality assurance QA
NIR coordinator	- Overall responsibility for the preparation of the National Inventory Report (NIR) including coordination within the GHG inventory team - Preparation of the final version of the NIR - Responsible for chapter 1, 2 and 10, 11, 12, and 13 of the NIR - Performing quality assurance and quality control (QA/QC)
Lead Expert	- Overall responsible for choice of methods, activity data and emission factor - Collection of data and relevant parameter including exchange with data provider - Estimation of the emissions of the GHG Inventory - Performing recalculation if needed including time series consistency - Estimation of uncertainties - Provision of results (GHG emissions) to the NIC - Writing the sectoral chapter of the NIR and provision of relevant information to general chapters - Provision of NIR sectoral chapter to NIR coordinator - Performing quality assurance and quality control (QA/QC) - Supporting in general and provision of answers to questions raised during - Technical Analysis of BURs as part of the international consultation and analysis (ICA) - Technical expert review⁶

⁶ This item is not valid for reporting under the convention.

Role	Task and responsibilities
	Archiving activity data, calculation sheets, and all relevant information
Sector Expert	All responsibilities and tasks of the lead experts in case of his/her absence
QA Expert	Performing the final QA/QC checks before final compilation of the reporting tables and NIR
Key Category Analysis	- Performing the Key Category Analysis - Writing chapter 1.5 of the National Inventory Report
Uncertainty Analysis	- Performing the Uncertainty Analysis - Writing chapter 1.6 of the National Inventory Report
Data management	- Overall responsibility of the GHG inventory folder - Provision of folder structure, naming convention, etc.

Further tasks and responsibilities are outlined in the Chapter *Inventory development cycle and guidance* and table 'National Inventory preparation schedule/guidance'.

1.3.3 Capacity building

In the following tables, the selected capacity buildings relevant to GHG inventory 1990-2022 and BTRs building are provided.

Table 1-16 Capacity building relevant to GHG inventory 1990-2020 and BTRs

Date	Topic	Institution
2021-2022	- Training the Technical Analysis of Biennial Update Reports (BURs) - The 11th round of the CGE training programme for technical experts - undertaking technical analysis of biennial update reports from Parties not included in Annex I to the Convention. - The 12th round of CGE training programme for technical experts undertaking technical analysis of biennial update reports from Parties not included in Annex I to the Convention. - The 13th round of the CGE training programme for technical experts undertaking technical analysis of biennial update reports from Parties not included in Annex I to the Convention. - The 14th round of the CGE training programme for technical experts undertaking technical analysis of biennial update reports from Parties not included in Annex I to the Convention. - The 15th round of the Training programme for review experts for the technical review of biennial reports and national communications of Parties included in Annex I to the Convention	UNFCCC
2021-2022	- Training The Review of Information submitted by Annex I Parties - Training programme for the review experts for the technical review of Information reported in biennial reports and national communications by Annex I Parties.	UNFCCC
2016	Projet APNC appui au Plan National Climat Les inventaires des Gaz à Effet de Serre	CITEPA

Date	Topic	Institution
2019-2022	Renforcement de la gouvernance climatique au service de la CPDN (ClimGov) • L'établissement des inventaires de GES dans le secteur des déchets en Algérie • Formation sur le cadre de la transparence renforcée dans les changements climatiques • Méthodologies MRV des émissions de GES du secteur de l'Energie • La méthodologie de développement de l'atténuation des émissions de GES du secteur de l'électricité • Méthodologies de développement de l'atténuation des émissions de GES dans le secteur du transport et de la distribution du gaz • Formation à la méthodologies IPCC 2006 d'estimations des émissions de SF₆ du secteur de l'électricité • Renforcement de capacités sur la modélisation par l'outil LEAP	GIZ
2021-2022	Preparation of BUR 1 and TNC GHG inventory and National Inventory preparation • Online training with international expert from Mauritius (2021) • Face-to-face training with international expert from Austria (2022)	UNDP

Table 1-17 Capacity building relevant to GHG inventory 1990-2022

Date	Topic	Institution
2024	• Training programmes for expert reviewers - Training programme of experts for review under the Paris Agreement • Course A: General and cross-cutting aspects for the technical expert review under the enhanced transparency framework under the Paris Agreement • Course B: Technical review of national inventories reports of anthropogenic emissions by source and removals by sinks of GHG ○ B.1 General guidance and cross-cutting ○ B.2 Technical review of national inventory reports – Energy sector ○ B.3 Technical review of national inventory reports – Industrial processes and product use (IPPU) sector ○ B.4 Technical review of national inventory reports – Agriculture sector ○ B.5 Technical review of national inventory reports – Land Use, land-use change and forestry (LULUCF) sector ○ B.6 Technical review of national inventory reports –Waste sector • Course C: Technical review of the information necessary to track progress made in implementing and achieving NDCs	UNFCCC
2024	Preparation of BTR1 GHG inventory and National Inventory preparation • Face-to-face training with international expert from Austria (2024)	UNDP

Table 1-18 Capacity building by CGE trainings and participation in trainings of review experts

				CGE trainings		Review of Information submitted by Annex I Parties														Technical analysis under International consultation and analysis (ICA) for non-Annex I Parties										Participation in Review of Information submitted by Annex I Parties	Participation in Technical analysis under International consultation and analysis (ICA) for non-Annex I Parties														
						Review of greenhouse gas inventories (Basic course + KP Course)														Technical Analysis of Biennial Update Reports (BURs)																									
				2006 IPCC training				Basic course (Overview + at least one sector)							Kyoto Protocol Courses							Review of Biennial Reports (BRs) and National Communications (NCs) Overview + at least one additional focus										Cluster A - reporting					Cluster B - background materials					Cluster C - REDD+			
Institution	experience (years)	direct GHG inventory	indirect GHG inventory	RoS of Emissions	Overview	Energy	IPU	Agriculture	Land Use, Land-Use Change, and Forestry	Waste	Energy	IPU	Agriculture	Land Use, Land-Use Change, and Forestry	Waste	Review of compliance	Improving communication and facilitating consensus in expert review teams	Annual refresh seminars for experienced GHG inventory experts	A. National Inventory Systems	B. Application of the Accounting of Adjustments under Article 7.4	C. Modalities for the Accounting of Adjustments under Article 7.4	D. Review of National Registers and Information Assessed under Article 7.4	E. Review of activities under Article 3, paragraph 3 and 4 of the Kyoto Protocol	1. General and cross-cutting aspects	2. Targets and of policies and measures, their effects and their contribution to achieving those targets	3. Greenhouse gas emissions, emission trends, projections and the total effect of policies and measures	4. Provision of financial support, technology transfer and capacity-building	Module 1 Overview	Module 2.1 Mitigation	Module 2.2 GHG inventory	Module 2.3 Needs and support	2.1 Mitigation	2.2 a GHG inventory: Energy	2.2b GHG inventory: Industrial processes	2.2c GHG inventory: Agriculture/ULUCF	2.2d GHG inventory: Land Use, Land-Use Change, and Forestry	2.2e GHG inventory: Waste	2.2f GHG inventory: Key difference between 1996 and 2006 IPCC GCI	REDD-plus: Guidance and Background						
1	MEER	8	x	x	x			x																					x		x	x													
2	ANCC	6	x	x																				x			x		x	x	x	x	x	x	x	x	x	x	x	x					
3	ANCC	6	x	x																				x			x		x	x	x	x	x	x	x	x	x	x	x	x					

[illegible]

1.3.4 Inventory development cycle and guidance

The biennial and/or annual preparation of the GHG inventory follows in general the **inventory development cycle** presented in the following figure and described in Chapter 1 *Introduction to the 2006 Guidelines* of Volume 1: General Guidance and Reporting (GGR).

The preparation of the inventory starts always with identification of the key categories of the previous inventory followed by the selection of the appropriate method for estimation for each category according to the **decision tree** of each source presented in Volume 2 – 5 of the 2006 IPCC guidelines.

The collection of activity data and relevant parameters and the estimation of emission by sources and removals by sinks should follow the selection of the appropriate methods. As stated in the 2006 IPCC Guidelines the data collection activities should consider time series consistency and establish and maintain good verification, documentation and checking procedures (QA/QC) to minimize errors and inconsistencies in the inventory estimates.⁷ Information and data on uncertainties should if possible be collected at the same time. The relevant QC Checking and documentation is done according to the QC TIER 1 & 2 Checklist which is presented in Chapter below.

The following table presents relevant inventory tasks which are based on each other. It is also indicated which documents (chapter and/or sheet) are required for the respective work steps. The relevant responsible experts involved in each step are also identified.

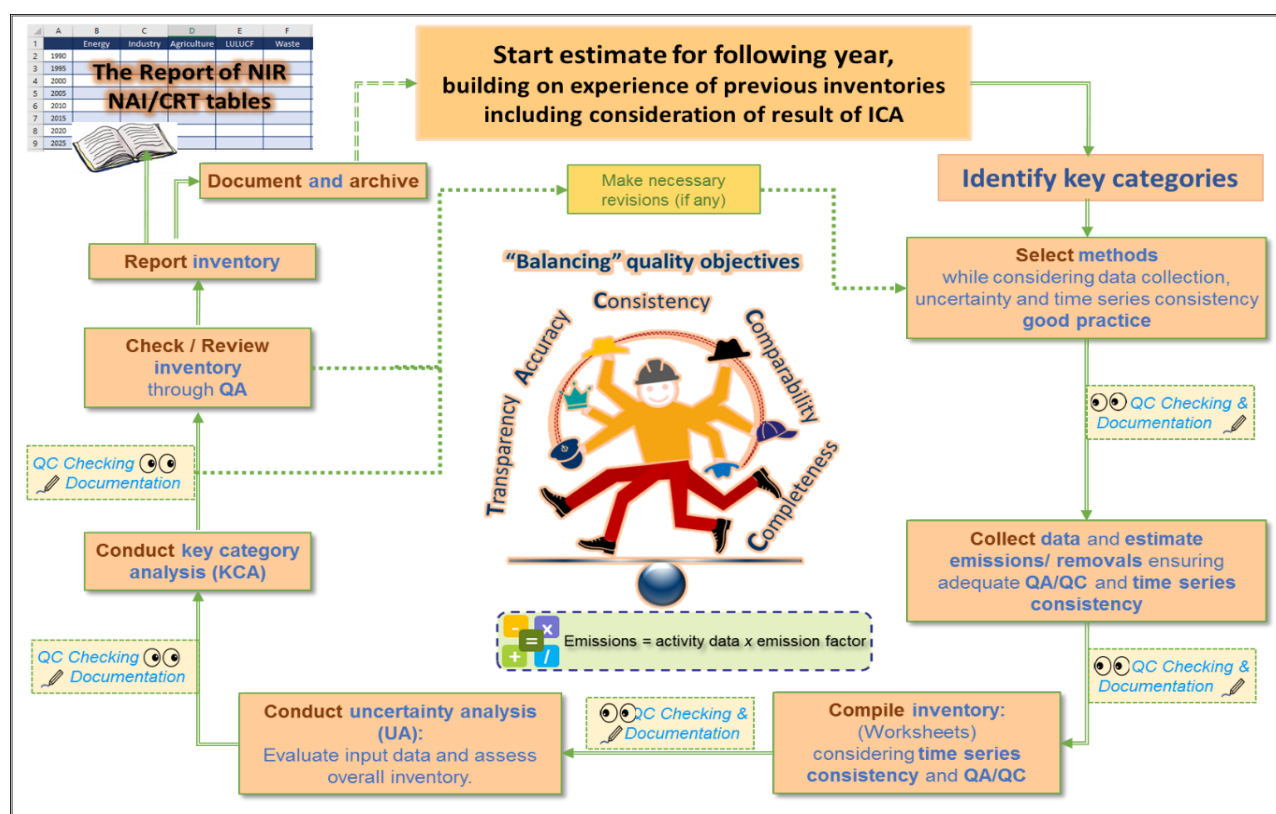


Figure 1-10 Inventory development cycle

⁷ 2006 IPCC guidelines, Vol. 1: General Guidance and Reporting, Chap. 1: Introduction to the 2006 Guidelines, 1.5 Compiling an inventory, p. 1.9.

Source : According to the 2006 IPCC guidelines, Vol. 1: General Guidance and Reporting, Chap. 1: Introduction to the 2006 Guidelines, sub-chap. 1.5 Compiling an inventory, Figure 1.1, p. 1.9.

Table 1-19 National Inventory preparation schedule / guidance

When	Task	Where / What	BUR & NC coordinator	Focal point GHG inventory	National Inventory Compiler (NIC)	QA/QC coordinator	NIR coordinator	Documentation & Archiving Lead	KCA & UA coordinator	Sector experts	Data provider	QA experts	to be determined
1.	Start estimate for following year, building on experience of previous inventories including consideration of result of ICA												
2.	Meeting of BUR & NC coordinator, Focal point GHG inventory, National Inventory Compiler (NIC) and QA/QC Coordinator: - Analyzing the QA/QC plan & Inventory improvement plan - Prioritizing the recommended improvements (including a timeline and responsibilities) - planning relevant resources.	Protocol (template) Inventory improvement plan.xlsx QA-QC improvement plan.xlsx											
3.	Kick-off meeting – GHG inventory team (News, deadlines, changes, etc.)	Protocol (template) Inventory improvement plan.xlsx QA-QC improvement plan.xlsx											
4.	Conducting Capacity trainings and/or refreshing general issues, sector-specific topics, QC activities	Training plan Inventory improvement plan											
5.	Identify key categories	NIR 2020 chapter 1.5.docx KCA_2020.xlsx											
6.	Select methods while considering data collection, uncertainty and time series consistency good practice	2006 IPCC GL, Volume 2 – 5 NIR – sectoral chapters											
7.	QC Checking & Documentation, updating Inventory improvement plan	DZA_Inventory improvement plan.xlsx QC checks according to QC TIER 1 & 2 Checklist											
8.	Kick-off meeting – with data provider (with all / in groups)	Protocol (template)											
9.	Collection of activity data and relevant parameters ensuring adequate - QC Checking (completeness, transparency, accuracy) - time series consistency	Data collection using data collection files (template) (source-specific) from data provider											
10.	documentation (if discrepancies, delay, etc.)	Archiving response (letter, Email, etc.) in folder 04_Archive											
11.	Preparation/Updating of calculation sheets - adding new year - modification if higher TIER methodology will be applied - updating NIR tables templates - updating graphs	source-specific calculation sheets, e.g., 1A1a_InventoryTool_DZA.xlsx											

When	Task	Where / What	BUR & NC coordinator	Focal point GHG inventory	National Inventory Compiler (NIC)	QA/QC coordinator	NIR coordinator	Documentation & Archiving Lead	KCA & UA coordinator	Sector experts	Data provider	QA experts	to be determined
12.	Estimate emissions/removals ensuring adequate QA/QC and time series consistency	Inserting activity data or linking data collection files with calculation files											
13.	QC Checking & Documentation, updating Inventory improvement plan	- Documentation - QC checks according to part 1,2,3 and 6 of QC TIER 1 & 2 Checklist											
14.	Preparation/Updating of Inventory file - adding new year - adding new calculation file, if needed - updating NIR tables templates - updating graphs	0_CRT_NationalTotal_1990-2022_DZA_v5.xlsx 1_CTR_Tables_Input.xlsx 2_CTR_Tables_Input.xlsx 3_CTR_Tables_Input.xlsx 4_CTR_Tables_Input.xlsx 5_CTR_Tables_Input.xlsx GHG_Input_CRT_Total_1990-2022_DZA.xlsx											
15.	Compile inventory considering time series consistency and QA/QC: update links of all calculation sheets	0_CRT_NationalTotal_1990-2022_DZA_v5.xlsx 1_CTR_Tables_Input.xlsx, etc. GHG_Input_CRT_Total_1990-2022_DZA.xlsx QC checks according <i>QC TIER 1 & 2 Checklist</i>											
16.	Sharing results with inventory team and QC check of Inventory file by sector experts and if needed revision of Inventory file	QC checks <i>QC TIER 1 & 2 Checklist</i>											
17.	Make necessary revisions (if any)												
18.	Conduct uncertainty analysis (UA): Evaluation of input data: AD and EF.	"category" calculation files, sheet uncertainties											
19.	Conduct uncertainty analysis (UA): assessment of overall inventory uncertainty.	19R_V1_Ch03_Ad_IPCC_Tool_for_Approach_1_Uncertainty_Analysis.xlsx 19R_V1_Ch03_Ad_IPCC_Tool_Uncertainty_Analysis_DZA.xlsx Using GHG_Input_CRT_Total_1990-2022_DZA.xlsx QC checks according to <i>QC TIER 1 & 2 Checklist</i>											
20.	QC Checking & Documentation, updating Inventory improvement plan	QC checks according to <i>QC TIER 1 & 2 Checklist</i>											

When	Task	Where / What	BUR & NC coordinator	Focal point GHG inventory	National Inventory Compiler (NIC)	QA/QC coordinator	NIR coordinator	Documentation & Archiving Lead	KCA & UA coordinator	Sector experts	Data provider	QA experts	to be determined
21.	Sharing results with inventory team and QC check of UA file by sector experts and NIR coordinator												
22.	Make necessary revisions (if any)												
23.	Conduct key category analysis (KCA) - Update formula for new inventory year - Update link with CRT-CommonReportingTables_DZA.xlsx	KCA_DZA_1990-2022_v3.xlsx Using GHG_Input_CRT_Total_1990-2022_DZA.xlsx											
24.	QC Checking & Documentation, updating Inventory improvement plan	QC checks according to part 1 of <i>QC TIER 1 & 2 Checklist</i>											
25.	Sharing results with inventory team and QC check of KCA file by sector experts and NIR coordinator	KCA_DZA_1990-2022_v3.xlsx 19R_V1_Ch03_Ad_IPCC_Tool_Uncertainty_Analysis_DZA.xlsx											
26.	Make necessary revisions of emission estimation if higher TIER methodology has to be applied according to decision tree of relevant source (if any)												
27.	Repeat step 14. to – 25. in case of revision												
28.	QC Checking & Documentation, updating Inventory improvement plan	“category” calculation files, sheet Improvements QC checks according to <i>QC TIER 1 & 2 Checklist</i>											
29.	Update NIR sectoral chapter												
30.	QC Checking & Documentation, Cross-checking with Inventory improvement plan	QC checks according to part 2 and 3 of <i>QC TIER 1 & 2 Checklist</i>											
31.	Update NIR chapter 1 Introduction												
32.	QC Checking & Documentation, Cross-checking with Inventory improvement plan	QC checks according to part 2 and 3 of <i>QC TIER 1 & 2 Checklist</i>											
33.	Update NIR chapter 1.6 KCA												
34.	QC Checking & Documentation, Cross-checking with Inventory improvement plan	QC checks according to part 2 and 3 of <i>QC TIER 1 & 2 Checklist</i>											
35.	Update NIR chapter 1.7 Uncertainties												

When	Task	Where / What	BUR & NC coordinator	Focal point GHG inventory	National Inventory Compiler (NIC)	QA/QC coordinator	NIR coordinator	Documentation & Archiving Lead	KCA & UA coordinator	Sector experts	Data provider	QA experts	to be determined
36.	QC Checking & Documentation, Cross-checking with Inventory improvement plan	QC checks according to part 2 and 3 of <i>QC TIER 4 & 5 Checklist</i>											
37.	Finalization of Inventory Improvement Plan and QA-QC improvement plan Finalization of NIR Chapter 9 Recalculation and Improvement	Inventory improvement plan.xlsx QA-QC improvement plan.xlsx											
38.	Update NIR chapter 1.6 QA/QC												
39.	QC Checking & Documentation, Cross-checking with Inventory improvement plan	QC checks according to <i>QC TIER 1 & 2 Checklist</i>											
40.	Update NIR chapter 2 Trend												
41.	QC Checking & Documentation, Cross-checking with Inventory improvement plan	QC checks according to <i>QC TIER 1 & 2 Checklist</i>											
42.	Treatment of confidentiality issues	Checklist - Confidential data											
43.	Update NIR chapter # References												
44.	QC Checking & Documentation, Cross-checking with Inventory improvement plan	QC checks according to <i>QC TIER 1 & 2 Checklist</i>											
45.	Check / Review inventory and NIR through QA	QA checks using the <i>QC TIER 1 & 2 Checklist</i>											
46.	Make necessary revisions of emission estimation and /or NIR based on findings and recommendations of QA (if any)												
47.	Repeat step 14. to – 47. in case of revision												
48.	Finalize National GHG Inventory and National Inventory Report (NIR) for approval												
49.	Reporting of National Inventory and National Inventory Report (NIR)												
50.	Collection of QC documents, QA documents, Inventory Improvement Plan												
51.	Archiving calculations files, Inventory files, KCA & UA file, NIR, QC documents, QA documents, Inventory Improvement Plan	05_QA-QC\04_InventoryImprovementList 06_Inventory\2018\Submission 07_NIR\2018_NIR\02_Submission_UNFCCC											

1.3.5 Inventory improvement plan

The National Climate Change Agency placed under the supervision of the Minister responsible for the environment is responsible for the Inventory improvement plan.

The purpose of the agency is to promote the integration of the problem of climate change in all development plans and to contribute to the protection of the environment.

As part of the national strategy in the field of climate change, the agency is responsible for carrying out information, awareness, study and synthesis actions in areas relating to emissions and sequestration of greenhouse gases effect, adaptation to climate change, mitigation of its effects and various socio-economic impacts and to list all the activities of the various sectors to fight against climate change and to contribute to any national inventory of greenhouse gases according to the regulations in force;

The planning of the GHG inventory preparation of each inventory cycle start with thoroughly analysis of the **QA/QC plan** and **Inventory improvement plan** in order to prioritize the tasks and available resources.

- QA/QC plan: bases on findings of internal and external audits; it also includes a training plan for sector experts.
- Inventory improvement plan: based on findings of the International Consultation and Analysis (ICA), (peer-) reviews, audits of the GHG inventory.

The results from internal/external audits, expert peer reviews and UNFCCC international consultation and analysis (ICA) are merged in the inventory improvement plan and Quality improvement plan. These plans lists the relevant sector, recommendations for improvement (reference and citation), priorities, responsibilities, deadlines and confirmation of implementation.

The following table presents the template of the inventory improvement plan which is prepared for each sector, QA/QC plan and Institutional arrangements.

Table 1-20 The inventory improvement plan

Area covered																	Waste				TEXT FOR NIR									
REGISTERING / ENREGISTREMENT																	FOLLOWING													
ID	Recording date	CRT Category	GHG Air pollutants	Source of improvement proposal	Finding (Short description)	Citation of Finding/ Detailed description	Recommendation / To Do	Type of improvement	Key Category	Priority level	Associated ID(s)	Resources	Working plan needed	Name of Workplan	Expected date of improvement	Responsible for implementation	Date of implementation	Text for NIR sectoral chapter	Text for NIR Chapter 9 Explanations and justifications for recalculations	Responsible for verification	Date of verification	Status	Comment / Information							
ID	Date d'enregistrement	CRT / NFR Catégories	GES Polluants atmosphériques	Source de la proposition d'amélioration	Informations sur l'examen Brève description	Informations sur l'examen Description détaillée	Recommandation / Affaire	Type d'amélioration	Catégorie de source clé	Niveau de priorité	ID(s) associé(s)	Ressources	Plan de travail nécessaire	Nom du plan de travail	Date prévue de l'amélioration	Responsable de la mise en œuvre	Date de mise en œuvre	Texte pour le chapitre sectoriel du NIR	Texte pour le chapitre 9 du NIR Explications et justifications des recalculs	Responsable de la vérification	Date de la vérification	Statut	Commentaires/ Informations							
Common Reporting Tables (CRT) -> UNFCCC	Origin of the improvement proposal. QA exercise /Review/Technical analysis: Desk Review (DR) / Centralized Review (CR) / In Country Review (ICR), year, paragraph and/or page: e.g. "UNFCCC CR 2001, §34"			Name of the improvement -> 5 words max.	Detailed description of the proposed improvement, either written by the source of the proposal (e.g.: case of a national expert), or as it appears in analysis reports (e.g.: case of QA analysis, bilateral reviews etc) Example: Original quote of the (review) reports!			Method AD EF Method, AD Method, EF, AD AD; EF AD; EF GHG AD; EF-CO2 AD; EFnon-CO2	Transparency Accuracy Completeness Comparability Consistency	Please select Yes No Missing source NA	Priority level for the implementation of the improvement: High (urgent) - SHALL requirements essential for next reporting e.g. finding were several times topic or recommendation; Important - SHOULD requirement useful for next reporting for new topics, might be urgent topic in the future, e.g. Key Category related, Low - ENCOURAGEMENT not required for next reporting for non-urgent topics, Non-Key Category related; Minor	Inventory 20XX: can be solved within the 'normal' framework of inventory preparation (usual planning run) UNCC / Ministry: more financial resources are needed for research UNFCCC Focal point: more resources are needed	If related to numbers -> GHG inventory 20XX -> AIE inventory 20XX If related to transparency -> NIR 20XX -> IIR 20XX !! In case of delay: crossing out of date (Format Cells box, under Effects, click Strikethrough) and adding new time line. Add comment with reason of delay!!!	Only one expert can be selected National Inventory compiler (NIC) Energy expert Transport expert Fugitive expert IPPU expert (exc F-Gas) F-gas expert Solvent expert Agriculture expert LULUCF expert Waste Expert KCA expert Uncertainty expert NIR coordinator IIR coordinator QA/QC manager Data manager UNFCCC Focal point	Only one expert can be selected National Inventory compiler (NIC) Energy expert Transport expert Fugitive expert IPPU expert (exc F-Gas) F-gas expert Solvent expert Agriculture expert LULUCF expert Waste Expert KCA expert Uncertainty expert NIR coordinator IIR coordinator QA/QC manager Data manager UNFCCC Focal point															
W-005-5																														
W-006-5																														
W-007-5																														
W-008-5																														
W-009-5																														
W-010-5																														
W-011-5																														
W-012-5																														
W-013-5																														
W-014-5																														
W-015-5																														
W-016-5																														
W-017-5																														
W-018-5																														
W-019-5																														
W-020-5																														
W-021-5																														
W-022-5																														

1.3.6 Quality control (QC) and Quality assurance (QA) procedures

The ANCC also represents the emission inventory control body: the Agency is organized so that each sector expert controls the sector of his colleague who is responsible for controlling another sector.

As stated in the 2006 IPCC Guidelines, Chapter 6.6, and presented in the following figure,

- general QC procedures include generic quality checks related to calculations, data processing, completeness, and documentation that are applicable to all inventory source and sink categories.
- category-specific QC complements general inventory QC procedures and is directed at specific types of data used in the methods for individual source or sink categories. These procedures require knowledge of the specific category, the types of data available and the parameters associated with emissions or removals and are performed in addition to the general QC checks.

does NOT require knowledge of the emission source category ↓ general		requires ↓ source specific	
QC procedures sector experts (1 st party) performed throughout preparation of inventory			
TIER 1		TIER 2	
data validation, calculation sheet (check of formal aspects)		preparation of NIR, comparison with IPCC Guidelines (check of applicability, comparisons)	
QA procedures quality manager (2 nd or 3 rd party; staff not directly involved, preferably independent) performed at different levels or after inventory work has finished			
TIER 1 basic, before submission			
		expert peer review internal audit / expert peer review evaluate if TIER2 QC is effectively performed (check if methodologies are applicable)	
TIER 2 extensive			
(quality management) system audit evaluate if TIER 2 QC is effectively performed		expert peer review International Consultation and Analysis (ICA) ● A technical analysis of BUR by a team of experts (TTE) ● A facilitative sharing of views in the form of workshop under the SBI evaluate if TIER 2 QC is effectively performed (check if methodologies are applicable)	

Figure 1-11 General overview of QA/QC procedures

QC procedures are performed as defined in the Checklist provided in IPCC 2006 Guidelines,

- Table 6.1 General inventory QC procedures
- A1. General QC checklist
- A2. Category-specific QC checklist

For each step of the inventory cycle relevant QC checks are prepared. Furthermore, the checks are divided in content checks and formal checks. As well checks could be done for activity data, emission factor, and emission factor separately. In case of higher Tier method, not only AD and EF are used but also other parameters.

As the estimation of the GHG emissions and removal and the preparation of the reporting elements NIR and NAI tables are done at different stages of the inventory preparation cycle, the QC TIER 1 & 2 Checklist provides guidance on how and where the checks have to be done. Finally, each source has its own QC TIER 1 & 2 Checklist which can be individually refined.

1.3.6.1 Checklist for general QC checks

In the following table the Checklist for general QC checks (QC TIER 1) provided by the 20016 IPCC guidelines is provided.

Table 1-21 Checklist for general QC checks

Checklist for general QC checks						
Inventory Report:			Source/Sink Category			
Title(s) and Date(s) of Inventory Spreadsheet(s):						
Source (sink) category estimates prepared by (name/affiliation):						
Summary of results of checks and corrective actions taken						
Suggested checks to be performed in the future:						
Any residual problems after corrective actions have been taken:						

Checklist for general QC checks						
Item	Check completed			Corrective action		Supporting documents (provide reference)
	Date	Individual (first initial, last name)	Errors (Y/N)	Date	Individual (first initial, last name)	
DATA GATHERING, INPUT, AND HANDLING ACTIVITIES: QUALITY CHECKS						
1	Check a sample of input data for transcription errors.					
2	Review spreadsheets with computerized checks and/or quality check reports					
3	Identify spreadsheet modifications that could provide additional controls or checks on quality					
4	Other (specify):					
DATA DOCUMENTATION: QUALITY CHECKS						
5	Check project file for completeness					
6	Confirm that bibliographical data references are included (in spreadsheet) for every primary data element					
7	Check that all appropriate citations from the spreadsheets appear in the inventory document					
8	Check that all citations in spreadsheets and inventory are complete (i.e., include all relevant information)					
9	Randomly check bibliographical citations for transcription errors					
10	Check that originals of new citations are in current docket submittal					

National circumstances, institutional arrangements and cross-cutting information
QA/QC Plan

Checklist for general QC checks						
Item	Check completed			Corrective action		Supporting documents (provide reference)
	Date	Individual (first initial, last name)	Errors (Y/N)	Date	Individual (first initial, last name)	
11	Randomly check that the originals of citations (including Contact Reports) contain the material & content referenced					
12	Check that assumptions and criterion for selection of activity data, emission factors and other estimation parameters are documented					
13	Check that changes in data or methodology are documented					
14	Check that citations in spreadsheets and inventory document conform to acceptable style guidelines					
15	Other (specify):					
CALCULATING EMISSIONS AND CHECKING CALCULATIONS						
16	Check that all calculations are included (instead of presenting results only)					
17	Check whether units, parameters, and conversion factors are presented appropriately					
18	Check if units are properly labelled and correctly carried through from beginning to end of calculation					
19	Check that conversion factors are correct					
20	Check that temporal and spatial adjustment factors are used correctly					
21	Check the data relationships (comparability) and data processing steps (e.g., equations) in the spreadsheets					
22	Check that spreadsheet input data and calculated data are clearly differentiated					
23	Check a representative sample of calculations, by hand or electronically					
24	Check some calculations with abbreviated calculations					
25	Check the aggregation of data within a category					
26	When methods or data have changed, check consistency of time series inputs and calculations					
27	Check current year estimates against previous years (if available) and investigate unexplained departures from trend					
28	Check value of implied emission/removal factors across time series and investigate unexplained outliers					
29	Check for any unexplained or unusual trends for activity data or other calculation parameters in time series					
30	Check for consistency with IPCC inventory guidelines and good practices, particularly if changes occur					
31	Other (specify):					

1.3.6.2 Category-specific checklist

In the following table the Category-specific checklist (QC TIER 2) provided by the 2006 IPCC guidelines is provided.

Table 1-22 Category-specific checklist

Checklist for general QC checks						
Inventory Report:			Source/Sink Category			
Title(s) and Date(s) of Inventory Spreadsheet(s):						
Key category (or includes a key subcategory):			(Y / N)			
Category estimates prepared by (name/affiliation):						
Summary of results of checks and corrective actions taken						
Suggested checks to be performed in the future:						
Any residual problems after corrective actions have been taken:						

Category-specific checklist - Part A: Data gathering and selection						
Item	Check completed			Corrective action		
	Date	Individual (first initial, last name)	Errors (Y/N)	Date	Individual (first initial, last name)	Supporting documents (provide reference)
EMISSION DATA QUALITY CHECKS						
1	Emission comparisons: historical data for source, significant sub-source categories					
2	Checks against independent estimates or estimates based on alternative methods					
3	Reference calculations					
4	Completeness					
5	Other (detailed checks)					
EMISSION FACTOR QUALITY CHECK						
6	Assess representativeness of emission factors, given national circumstances and analogous emissions data					
7	Compare to alternative factors (e.g., IPCC default, cross-country, literature)					
8	Search for options for more representative data					
9	Other (detailed checks)					
ACTIVITY DATA QUALITY CHECK: NATIONAL LEVEL ACTIVITY DATA						
10	Check historical trends					
11	Compare multiple reference sources					
12	Check applicability of data					
13	Check methodology for filling in time series for data that are not available annually					
14	Other (detailed checks)					
ACTIVITY DATA QUALITY CHECK: SITE-SPECIFIC ACTIVITY DATA						
15	Check for inconsistencies across sites					
16	Compare aggregated and national data					
17	Other (detailed checks)					

Category-specific checklist - Part B: Secondary data and direct emission measurement						
Item	Check completed			Corrective action		
	Date	Individual (first initial, last name)	Errors (Y/N)	Date	Individual (first initial, last name)	Supporting documents (provide reference)
SECONDARY DATA: SAMPLE QUESTIONS REGARDING THE QUALITY OF INPUT DATA						
1	Are QC activities conducted during the original preparation of the data (either as reported in published literature or as indicated by personal communications) consistent with and adequate when compared against (as a minimum), general QC activities?					
2	Does the statistical agency have a QA/QC plan that covers the preparation of the data?					
3	For surveys, what sampling protocols were used and how recently were they reviewed?					
4	For site-specific activity data, are any national or international standards applicable to the measurement of the data? If so, have they been employed?					
5	Have uncertainties in the data been estimated and documented?					
6	Have any limitations of the secondary data been identified and documented, such as biases or incomplete estimates? Have errors been found?					
7	Have the secondary data undergone peer review and, if so, of what nature?					
8	Other (detailed checks)					
DIRECT EMISSION MEASUREMENT: CHECKS ON PROCEDURES TO MEASURE EMISSIONS						
9	Identify which variables rely on direct emission measurement.					
10	Check procedures used to measure emissions, including sampling procedures, equipment calibration and maintenance.					
11	Identify whether standard procedures have been used, where they exist (such as IPCC methods or ISO standards).					
12	Other (detailed checks)					

1.3.6.3 QA and review procedures, and verification activities

As stated in the 2006 IPCC Guidelines, Chapter 6.8, and presented in Figure 1-11, Quality assurance (QA) comprises activities outside the actual inventory compilation. Good practice for QA procedures includes reviews and audits to

- assess the quality of the inventory,
- determine the conformity of the procedures taken and to identify areas where improvements could be made.

QA procedures may be taken at different levels (internal/external), and they are used in addition to the general and category-specific QC procedures.

Through internal/external audit and expert peer review an evaluation if TIER2 QC can be effectively performed:

- GHG inventory preparation and the GHG inventory is in line with 2006 IPCC Guidelines;
- data collection, calculation, referencing and archiving is handled according to the QA/QC plan;
- enough resources for the preparation of the GHG inventory and related reporting elements (NAI table and National Inventory Report (NIR)) are guaranteed by relevant national institutions;
- relevant activity data (e.g., energy balance, livestock data) are available and if the reliability of external data is ensured;
- QA/QC plan needs improvement;
- recommendations of UNFCCC international consultation and analysis (ICA) and previous internal/external audits and expert peer reviews have been considered and implemented;
- tailor-made / suitable trainings for the sector experts, National Inventory Compiler and other experts involved in the inventory preparation are provided.

1.3.7 Documentation and archiving

1.3.7.1 Documentation

For each sector, the documentation of the methodology and actual emission calculation (e.g., 1A1a_ElectricityTool_DZA.xlsx) includes:

- Description (source/sink category, emissions, key source, completeness, uncertainty),
- Methodology (decision tree).
- “Logbook” (who did what and when) (see Table 1-19 National Inventory preparation schedule / guidance)
- References for activity data, emission factors and/or emissions, respectively,
- Documentation of assumptions, sources of data and information, expert judgements etc. to allow full reproduction and understanding of choices made,
- Recalculations,
- Planned improvements,
- QC activities.

1.3.7.2 Expert judgements

The documentation of expert judgements in line with the IPCC 2006 Guidelines should include:

- Name of the expert and institution/department,
- Date,
- Basis of judgement (references to relevant studies etc.),
- Underlying assumptions

National circumstances, institutional arrangements and cross-cutting information
QA/QC Plan

Table 1-23 ReadMe of emission calculation sheets

This calculation tool is prepared by		  الوكالة الوطنية للغازات الدفيئة Agence Nationale des Changements Climatiques	© ANCC (National Agency of Climate Change) The Inventory Tool is ANCC copyright may not be modified or reproduced without permission from ANCC.				
Integrated inventory for Greenhouse gas (GHG)		Feedback and questions can be sent to belabdikhalid@gmail.com kaddours.05@gmail.com					
prepared by:	BELABDI Khalid and SAID Kaddour, ANCC (National Agency of Climate Change)		older versions always with date; e.g. 1A1a_InventoryTool_2023-02-20.xlsx drop down				
version:	02/04/2023						
file name:	1A1a_ElectricityTool_MNE.xlsx						
status:	final						
timeseries	1990-2020						
IPCC-Sources:	1.A1.a - Energy Industries - Public electricity		Please select year for Trend calculation (last year)				
			Please select the source		GWP	IPCC Fourth Assessment Report (4AR)	
file linked to:	Bilans Energetique_1990-2020.xlsx 1A1_CRT Tables Input.xlsx		Trend		Source	1 CO2 - Carbon dioxide	
folder of linked files:	###_C:\GHG_DZA06_Inventory2022_submission01_Energy\Energy\Balance ###_C:\GHG_DZA06_Inventory2022_submission10_CRT		2020		1.A.1.a.i	25 CH4 - methane	
description/content:	Integrated inventory Tools for estimation of (1) Greenhouse gas (GHG) emissions based on 2006 IPCC Guidelines 2019 Refinements to the 2006 IPCC Guidelines and (2) Air pollutant emissions based on EMEP/EEA Air pollutant emissions guidebook 2019				Energy Industries - Main Activity Electricity and Heat Production - Electricity Generation	298 N2O - Nitrous oxide	
Sheet name	Content		Content description	Susanne2018	IPCC	Other remarks	
Password							
Changelog	Information regarding updating / modification / changes		Information	unprotected worksheet			
1A1ai_IncentoryCylce	ToDo list linked to InventoryCycle.xlsx		Information	unprotected worksheet	1.A.1.a.i		
1A1ai_QC Checklist	QC TIER 1 & 2 CHECKLIST according to IPCC 2006 Guidelines, Chapter 6 linked to QC_TIER-1-2_Checklist.xlsx		Information	unprotected worksheet	1.A.1.a.i		
1A1ai_ChoiceMethology	Choice of Methology		Information	unprotected worksheet	1.A.1.a.i		
1A1ai_Completness & KeyCategory	Completness evaluation & KeyCategory linked to CompletnessEvaluation_KeyCategory.xlsx		Information	unprotected worksheet	1.A.1.a.i		
1A1ai_PlannedImprovem ents	Information related to Planned Improvements for transfer to NIR sectoral chapter for transfer to NIR chapter Recalculation & Planned improvements for transfer to IIR sectoral chapter for transfer to IIR chapter Recalculation & Planned improvements linked to PlannedImprovements.xlsx		Information	unprotected worksheet	1.A.1.a.i		
1A1ai_Recalculation	Information related to Recalculation for transfer to NIR sectoral chapter for transfer to NIR chapter Recalculation & Planned improvements for transfer to IIR sectoral chapter for transfer to IIR chapter Recalculation & Planned improvements linked to Reclaculation.xlsx		Recalculation	unprotected worksheet	1.A.1.a.i		
1A1ai_Uncertainty	Information related to Uncertainty for transfer to NIR sectoral chapter for transfer to NIR chapter Uncertainty for transfer to IIR sectoral chapter for transfer to IIR chapter Uncertainty linked to Uncertainty.xlsx		Information	unprotected worksheet	1.A.1.a.i		
1A1ai_NIR_tables_&_grap	Tables & graphs für NIR		result	unprotected worksheet but occasional protected	1.A.1.a.i		
1A1ai_IIR_tables_&_grap	Tables & graphs für IIR		result	unprotected worksheet but occasional protected	1.A.1.a.i		
1A1ai_CRT	GHG emissions (automatised) for CRT reporting for transfer to CRT - Common ReportingTables		(intermediate) result	protected worksheet	1.A.1.a.i	CRT - Common Reporting Tables	
1A1ai_NFR	Air Pollutants emissions (automatised) for NFR for transfer to NFR - Tables		(intermediate) result	protected worksheet	1.A.1.a.i	Nomenclature Format for Reporting (NFR) tables	
1A1ai_AD_Liquid	Calculation of emissions by liquid fuel and GHG / Pollutants		Input data	unprotected worksheet but occasional protected cells	1.A.1.a.i		
1A1ai_AD_Solid	Calculation of emissions by solid fuel and GHG / Pollutants		Input data	unprotected worksheet but occasional protected cells	1.A.1.a.i		
1A1ai_AD_Gas	Calculation of emissions by gaseous fuel and GHG / Pollutants		Input data	unprotected worksheet but occasional protected cells	1.A.1.a.i		
1A1ai_AD_Other-Fossil	Calculation of emissions by other fossil fuel and GHG / Pollutants		Input data	unprotected worksheet but occasional protected cells	1.A.1.a.i		
1A1ai_AD_Peat	Calculation of emissions by peat (fuel) and GHG / Pollutants		Input data	unprotected worksheet but occasional protected cells	1.A.1.a.i		
1A1ai_AD_Biomass	Calculation of emissions by biomass (fuel) and GHG / Pollutants		Input data	unprotected worksheet but occasional protected cells	1.A.1.a.i		
EF IPCC	Emission factors of 2006 IPCC GL for sector 1 A		Emission factors	protected worksheet	1.A		
EF EMEP-EEA 1A1	Emission factors of 2019 EMEP/EEA GB for sector 1.A.1		Emission factors	protected worksheet	1.A.1		
NCV_Default_2006_IPCC	TABLE 1.2 DEFAULT NET CALORIFIC VALUES (NCVs) AND LOWER AND UPPER LIMITS OF THE 95% CONFIDENCE INTERVALS		Parameter	protected worksheet	1.A		
Metric GWP	Global warming potential		Information	unprotected worksheet			
ExcelSuport	Excel support regarding used formualars		Information	unprotected worksheet			
Matrix_EBxCRF	Correspondance of activities of Energy Balance (IEA/EUROSTAT Questionnaire) and CRF sub categories		Information	unprotected worksheet			
DropDown&Definition	List for DropDown and Definitions of sectors and fuels		Information	protected worksheet			

1.3.7.3 Archiving

It is *good practice* to maintain documentation archive in such a way that every inventory estimate can be fully documented and reproduced if necessary. This includes secure archiving of complete datasets and shared databases that are used in inventory development. This is particularly important for categories that rely on the multi-step development of emissions from a large set of primary data from outside sources.

1.3.7.3.1 Database

Currently there is no centralized database for data collection and management in place, but it is planned under the new MRV system.

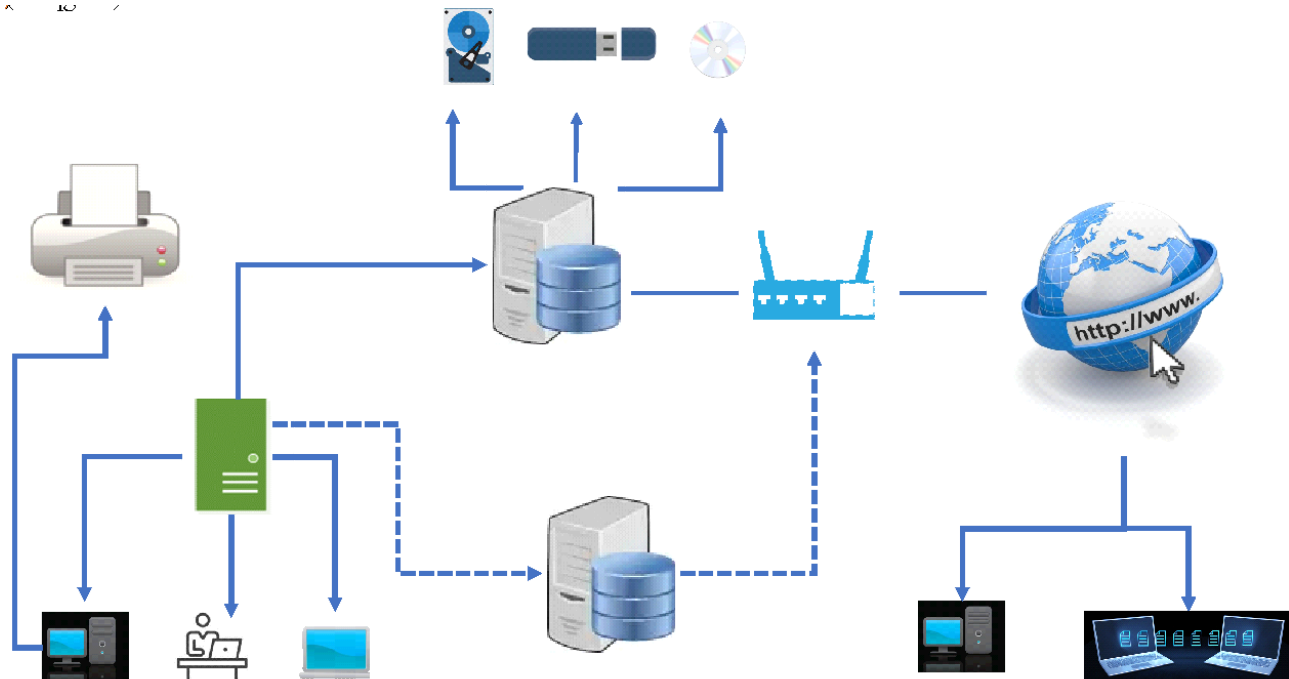


Figure 1-12 General overview of the data management inventory system of the Agency

1.3.7.3.2 Structure of the GHG inventory folder

In the following overall structure of the Team-Folder-GHG and subfolders are presented.

Overall structure of the Team-Folder-GHG
—01_LEGAL-Documents —02_GUIDELINES —03_REVIEW_ICA —04_ARCHIV —05_QA-QC —06_Inventory —07_NIR —09_NC_BUR
01_LEGAL-Documents

01_National	
02_UNFCCC	
01_UNFCCC_Framework-Convention	
02_KYOTO PROTOKOLL	
03_PARIS_Agreement	
05_COP Decisions	
1996_COP_2	
[.....]	
2018_COP_24	
2021_Glasgow	
2025_Belem-Brasilia	
06_GWP_IPCC	
07_Reporting Guidelines	
Annex-I	
MPGs	
NonAnnex-I	
09_Review Guidelines GHG Inventory	
UNFCCC Review Handbook	
03_UNECE	
ReportingGuidelines_2014	
UNECE Protocols	
UNECE-CLRTAP	
09_EuropeanUnion	
07_EU_GHG_Energy-Climate Action Governanace	
07_EU_GHG_MMR	
MMR-Reporting templates	
08_EU_EffortSharingDecision_ESD	
09_EU NEC_Directive	
EU-MRV-ETS	

02 GUIDELINES	
01_IPCC_2006 Guidelines	08_IPCC_Software
0_Overview	OtherVersions
1_Volume_General Guidance and Reporting	Translations for IPCC Inventory Software v2.88
2_Volume_Energy	Version_2.54
3_Volume_IPPU	version_2.91
XLS	32bit
4_Volume_AFOLU	64bit
5_Volume_Waste	version_2.92
worksheets	09_SAGE_Tool
02_2013 Supplement to-2006 IPCC Guidelines	
03_2019 Refinement to 2006 IPCC Guidelines	10_EMEP-EEA_Guidebook_2023
0_19R_Overview	Part A general guidance chapters
1_19R_Volume_General Guidance and Reporting	Part B sectoral guidance chapters
2_19R_Volume_Energy	1.Energy
3_19R_IPPU	1.A Combustion
4_19R_AFOLU	1.B Fugitive emissions from fuels
5_19R_WASTE	11. Natural sources
04_IPCC_EF_DataBase	2. Industrial processes and product use
05_IPCC_GPG_LULUCF	2.A Mineral products
Annex 4A.1 Tool for Estimation of Changes in Soil Carbon	2.B Chemical industry
Stocks	2.C Metal production
06_IPCC_GPG_2000	2.D-2.L Other solvent and product use
CORRIGENDUM	2.H Other industry production
07_Rev 1996 IPCC Guidelines	2.I Wood processing
Reference_Manual	2.J Production of POPs
1-Energy	2.K Consumption of POPs and heavy metals
2-Industry	
3-Solvents	2023
4-Agriculture	2.L Other production, consumption, storage, transportation or handling of bulk products
5-LUCF	3. Agriculture
6-Waste	5. Waste
Reporting_Instructions	6. Other sources
Workbook	10_EMEP-EEA_Guidebook_2019
1-Energy	10_EMEP-EEA_Guidebook_older_versions
2-Industry	10_EMEP_EEA_Guidebook_2016
3-Solvents	Part A_General Guidance Chapters

02 GUIDELINES	
4-Agriculture 5-LUCF 6-Waste	- Part B_Sectoral Guidance Chapters 11_CORINAIR_EMEP-EEA-Guidebook 1_CORINAIR_GUIDEBOOK_2000 2_CORINAIR_GUIDEBOOK_3rd 3_CORINAIR_GUIDEBOOK_2009 4_CORINAIR_GUIDEBOOK_2007 5_EMEP_EEA_Guidebook_2013

03 REVIEW ICA FMCP	
2023_Documents_FOR-QA-UNFCCC 2024_UNFCCC_QA_energy statistics 2024_UNFCCC_TA_BUR - TA_Technical Analysis - ICA 2026_UNFCCC_TER_BTR-NIR - TER_Review - FMCP	

04 ARCHIV	
01_Energy - E_001_MEM_NationalEnergyBalance - bilan_mem - bilan_realisations - chiffres_cles_ben - resultat - E_002_MEM_ReportingTemplates - E_003_DataSONEGAZ - E_002_[.....] 01_Fugitives - F_001_Total Petroleum Systems of the Illizi Province, Algeria and Libya - F_002_[.....] 01_Transport - T_001_ENNA_Statistics - T_002_ONS_Transport - T_003_[.....] 02_IPPU - I_001_ONS_Collection_Industrie - I_002_ProductionIndustrielles - I_003_[.....] 03_Agriculture - A_001_MARD_series_b - A_010_FAOSTAT_1990-2020 01_Production 02_Land 03_Forestry 04_Inputs 05_ClimateChangeEmissions 06_Machinery - A_011_FAO-Factsheet-Livestock - A_001_[.....]	04_LULUCF - L_001_DGF_Forest_inventory - L_002_DGF_SONATRACH - L_003_FAO_FRA - Algeria - OtherCountries - L_005_RAMSAR - L_005_[.....] 05_Waste - W_001_Wastewater treated in urban wastewater treatment plants - W_002_AND_Caractérisation des déchets_2019 - W_003_AND_Caractérisation des déchets_2014 - W_004_[.....] 06_General - G_001_Statistical Yearbook - G_002_NC1_DZA - G_003_NC2_DZA - G_003_[.....] - G_010_NIR-Other Countries - G_011_IIR_Other Countries - G_013_ConversionTableReportingCodes - G_014_IPCC_General - G_015_[.....] 10_Workshop-CapacityBuilding

05 QA-QC	
01_NationalSystem 02_QualityManual-QAQC-plan - QAQC plan_DZA - Examples_Other_Parties 03_QC CHECKLIST - General_IPCC - Sector_Specific 04_Inventory Improvement Plan IIP	

05 QA-QC	
	2024_submission_IIP_by_sector
	2026_submission_IIP_by_sector
	05_Archiving
	Instruction
	06_DataSupplier
	07_Guidance
	08_ICAT_Project
	Component_1
	Component_2
	Component_3

06 Inventory	
	1994_submission
	2010_submission
	2022_submission
	2024_submission
	01_Energy
	1A1
	1A2
	1A3
	1A3a
	1A3b
	Off-road
	TRACCS_EU_MS-Vehicle_study
	1A4
	1A5
	1B-Fugitive
	CS_EF_calculation
	EnergyBalance
	UNstatistics
	Reference_App
	02_IPPU
	2A_Mineral_Industry
	2A1_Cement_production
	2A2_Lime_production
	2A3_Glass_Production
	2A4_Other_Process_Uses_of_Carbonates
	2B_Chemical_Industry
	2B10_Other
	2B1_Ammonia_Production
	2B2_Nitric_Acid_Production
	2B3_Adipic_Acid_Production
	2B4_Caprolactam_Glyoxal_and_Glyoxylic_Acid_Production
	2B5_Carbide_Production
	2B6_Titanium_Dioxide_Production
	2B7_Soda_Ash_Production
	2B8_Petrochemical_and_Carbon_Black_Production
	2B9_Fluorochemical_Production
	2C_Metal_Industry
	2C1_Iron_and_Steel
	2C2_Ferroalloys_Production
	2C3_Aluminium_production
	2C4_Magnesium_production
	2C5_Lead_Production
	2C6_Zinc_Production
	2C7_Other
	2D_Non_Energy_Products_from_Fuels_and_Solvent_Use
	2D1_Lubricant_Use
	2D2_Paraffin_Wax_Use
	2D3_Solvent_Use
	2D4_Other
	2E_Electronics_Industry
	2F_Product_Uses_as_Substitutes_for_Ozone_Depleting_Substances
	2F1_Refrigeration_and_Air_Conditioning
	2F2_Foam_Blowing_Agents
	2F3_Fire_Protection
	2F4_Aerosols
	2F5_Solvents
	2F6_Other_Applications
	2G_Other_Product_Manufacture_and_Use
	2G1_Electrical_Equipment
	2G2_SF6_and_PFCs_from_Other_Product_Uses
	2.G.3 N ₂ O from Product Uses
	2G3_Medical_Applications
	2G4_Other
	2H_Other
	03_Agriculture
	01_AD_MARD
	02_AD_FAO
	03_Fertilizer
	04_MMS_analysis
	05_Other
	04_LULUCF
	4A
	4B
	4C
	4E
	4F
	4H
	WMO
	05_Waste
	AD_Solid_Waste
	5A
	5B
	5C
	5E
	10_CRT
	01_CRT_Input_Tables
	02_CRT ETF_Import
	03_CRT_Tables
	01_Energy
	02_IPPU
	03_Agriculture
	04_LULUCF
	05_Waste
	6_Other
	04_CRT_submission
	DZA-CRT-2024-V0.1-20241222
	DZA-CRT-2024-V0.1-20240924-194503_started
	01_Admin ETF
	CRT_Version_2024-11-28
	ETF
	UNFCCC_CRT_template
	11_NFR
	12_KCA
	13_Uncertainties
	2026_submission

07_NIR

- 2021_NIR_GIZ-Project
 - 01_Report
 - 00_GeneralChapters
 - 01_Energy
 - 09_Annex
- 2022_NIR
 - 10_NIR_Template
 - NIR-Chapter_11_References
 - NIR_Chapter_1
 - NIR_Chapter_10_Recalculations_and_Improvements
 - NIR_Chapter_2_Trend
 - NIR_Chapter_3_Energy
 - NIR_Chapter_4_IPPU
 - NIR_Chapter_5_Agriculture
 - NIR_Chapter_6_LULUCF
 - NIR_Chapter_7_Waste
 - NIR_Chapter_8_Other
 - NIR_Chapter_9_Precursors_Indirect
 - o_NIR_Annex_III_Detailed_Description_Reference_Approach
 - o_NIR_Annex_IV_QA-QC plan
 - o_NIR_Annex_I_Key_categories
 - o_NIR_Annex_VI_Reporting_tables
 - o_NIR_Annex_V_Additional information
 - z_FirstDraft_20220131
 - 00_Final-Version
- 2024_NID
 - 00_Final-Version
 - 00_Version_for_QA-QC
 - NID_Algeria_v1.0_20241208 rev MB 14122024
 - NID_Chapter
 - 00_Version_for_Validation
 - 01_General
 - 02_Trend
 - 03_Energy
 - 04_IPPU
 - 05_Agriculture
 - 06_LULUCF
 - 07_Waste
 - 08_Other
 - 09_Indirect_Emissions
 - 10_Recalculations_Improvements
 - 11_Annex_I_Key_categories
 - 12_Annex_II_Uncertainty_assessment
 - 13_Annex_III_Reference_approach
 - 14_Annex_IV_QA-QC_plan
 - 15_Annex_V_Additional_information
 - 16_Annex_VI_CRT_forNID
 - 17_References

- 2026_NID
 - 00_Final-Version
 - 00_Version_for_QA-QC
 - 00_Version_for_Validation
 - 01_General
 - 02_Trend
 - 03_Energy
 - 04_IPPU
 - 05_Agriculture
 - New folder
 - 06_LULUCF
 - 07_Waste
 - Trash
 - 08_Other
 - 09_Indirect_Emissions
 - 10_Recalculations_Improvements
 - 11_Annex_I_Key_categories
 - 12_Annex_II_Uncertainty_assessment
 - 13_Annex_III_Reference_approach
 - 14_Annex_IV_QA-QC_plan
 - 15_Annex_V_Additional_information
 - 16_Annex_VI_CRT_forNID
 - 17_References

08_NC_BUR_BTR

- CTF NDC tracking
 - For Mr khenass
- CTF OTHER PARTIES
- CTF support
- ETF tool
- Submission_DZA_2024
 - CRT Tables
 - DZA-CRT-2024-V0.1-20241225-153939_started
 - CTF NDC tracking
 - CTF Support
- Exchange_with_Mitigation
- BUR_1
- NC_1
- NC_2
- NC_3

09_Office_Training

1.3.7.3.3 Naming convention in folder GHG inventory folder

A folder naming convention is a framework for naming files and folders to ensure they are descriptive, consistent, and easy to find.

Calculation files
1A1a_EnergyInd_Tool_DZA.xlsx 1A1ai_EnergyInd_Tool_DZA.xlsx 1A1aii_EnergyInd_Tool_DZA.xlsx 1A1aiii_EnergyInd_Tool_DZA.xlsx 1A1b_EnergyInd_Tool_DZA.xlsx 1A1c_EnergyInd_Tool_DZA.xlsx 1A1ci_EnergyInd_Tool_DZA.xlsx 1A1cii_EnergyInd_Tool_DZA.xlsx 1A1ciii_EnergyInd_Tool_DZA.xlsx 1A1ciii1_EnergyInd_Tool_DZA.xlsx 1A1ciii2_EnergyInd_Tool_DZA.xlsx 1A1ciii3_EnergyInd_Tool_DZA.xlsx Files-Aggregated_1A1a_EnergyInd_Tool.pptx

NID files
NID_DZA_Executive_Summary_v20241201.docx NID_DZA_Executive_Summary_v0.docx NID_DZA_Executive_Summary_v20241130.docx

All files that are stored (expect as folder), outdated, older versions, shared get date as ending the date in the following format YYYY-MM-DD (International Year-Month-Day format)

i.e. 1A1ai_InventoryTool_2023-02-20.xlsx

If personal initials are needed, please use those deposited in the

1.3.8 Treatment of confidentiality issues

Information or data is declared as confidential when it could directly or indirectly identify an individual person, business, or organization. Following the Statistics Law Article, confidential data should not be published. To ensure completeness confidential data may be used to estimate GHG emissions and removal, but these emissions can be reported at a higher aggregated level so that confidentiality is no longer an issue. The checklist *Confidential data* should be used in order to ensure, that confidential data used in the inventory is not published.

Below, for each category the following checklist needs to be filled.

Table 1-24 CHECKLIST CONFIDENTIAL DATA according to IPCC 2006 Guidelines - Chapter 6

1	Submission :	1990-2024	Source / Sink Category:	
2	DATA USE			
3	Title of calculation sheets / internal_documentation / NID / CTF			

National circumstances, institutional arrangements and cross-cutting information
QA/QC Plan

4		Insert of data path/folder			
5		Source/sink category estimates prepared by (name):			
6		Source of confidential data			
7		Description of confidential data			
8		RELEASE OF RESULTS		YES	NO
9		Data in calculations sheets (Background calculation) visible / marked as confidential data			
10		Data in CTR visible directly or indirectly or marked as confidential data (example in „Recalculations“)			
11		Data in NIR not reproducible			
12	Results	confidentiality ensured, publication of results allowed			
13		confidentiality not ensured, publication of results not allowed			
14		Remarks			
15		If confidentiality not ensured, publication of results not allowed			
16		required action / measurements (e.g. higher aggregation)			
17		DATA USED / Acknowledgement of confidential data			
18	Date		Signature (sector expert)		
19	Date		Signature (National Inventory Compiler (NIC))		

1.4 General uncertainty assessment, including data pertaining to the overall uncertainty of inventory totals.

Uncertainty estimates are an essential element of a complete inventory of greenhouse gas emissions and removals and require a detailed understanding of the uncertainties of the respective input parameters. They should be derived for both the national level and the trend estimate, as well as for the component parts such as emission factors, activity data and other estimation parameters for each category.

As presented in the 2019 Refinement to the 2006 IPCC Guidelines two approaches for the estimation of combined uncertainties can be applied:

- Approach 1 uses simple error propagation equations and is used to estimate uncertainty in individual categories, in the inventory as a whole, and in trends between a year of interest and a base year.
- Approach 2 uses Monte Carlo or similar techniques.

However, the GHG inventory for 1990 – 2022 is prepared mainly applying TIER 1 methodology of the 2006 IPCC guidelines and the 2019 Refinement to the 2006 IPCC Guidelines. Therefore, the default uncertainties associated with the activity data and emission factors were selected.

The application of the TIER 1 approach for estimating the uncertainties is applied.

TIER 1 should be implemented using Table 3.2 of the 2019 Refinement to the 2006 IPCC GL.

The excel based tool 19R_V1_Ch03_Ad_IPCC_Tool_for_Approach_1_Uncertainty_Analysis.xlsx provided with the 2019 Refinement to the 2006 IPCC GL was applied.

Table 1-25 Summary report of uncertainties analysis

Sector	Emissions/ removals in base year	Emissions/ removals in year t	Contribution to total uncertainty by sector in year t	Contribution to total trend uncertainty by sector
	kt CO ₂ equivalent	kt CO ₂ equivalent	%	%
Energy	62,937.09	198,689.95	98.3%	98.3%
IPPU	6,701.96	22,094.97	0.1%	0.1%
Agriculture	7,864.68	9,593.66	0.4%	0.4%
LULUCF			NE	NE
Waste	3,252.10	10,023.46	1.3%	1.3%
Other	NO	NO	NA	NA
Total	80,755.83	240,402.04		
Uncertainty in total inventory			31.5%	132.7%

In Annex II of the NIR The Uncertainty assessment for the GHG inventory 1990 – 2022 is presented. Information is presented in the format and outline of the Table 3.3 of volume 1 of the 2006 IPCC Guidelines.

Table 1-26 Global warming potentials (GWP) provided by the IPCC Assessment Reports.

Species / gas name	Chemical formula / Abbreviation	Global Warming Potential (Time Horizon) based on the effects of GHGs over a 100-year time horizon		
		IPCC Second Assessment Report ⁸	IPCC Fourth Assessment Report ⁹	IPCC Fifth Assessment Report ¹⁰
Carbon dioxide	CO ₂	1	1	1
Methane	CH ₄	21	25	28
Nitrous oxide	N ₂ O	310	298	265
Sulphur hexafluoride	SF ₆	23 900	22 800	23 500
Nitrogen trifluoride	NF ₃		17200	16 100
Hydrofluorocarbons	HFC	Hydrofluorocarbons (HFCs) and Perfluorocarbons (PFCs) consist of different substances, therefore GWPs have to be calculated individually depending on the substances		
Hydrofluorocarbons	PFC			
HFC-23	CHF ₃	11 700	14 800	12 400
HFC-32	CH ₂ F ₂	650	675	677
HFC-41	CH ₃ F	150	92	116
HFC-43-10mee	CF ₃ CH ₂ CH ₂ CF ₃	1 300	1 640	1 650
HFC-125	C ₂ H ₅ F	2 800	3 500	3 170
HFC-134	C ₂ H ₂ F ₄	1 000	1 100	1 120
HFC-134a	CH ₂ FCF ₃	1 300	1 430	1 300
HFC-152a	C ₂ H ₄ F ₂	140		138
HFC-143	C ₂ H ₃ F ₃	300	353	328
HFC-143a	CF ₃ CH ₃	3 800	4 470	4 800
HFC-152	CH ₂ FCH ₂ F		53	16
HFC-152a	C ₂ H ₄ F ₂		124	138
HFC-236ea	CHF ₂ CH ₂ CF ₃		1 370	1 330
For further species see relevant IPCC Assessment report				
See also Chapter 2.10 Global Warming Potentials and Other Metrics for Comparing Different Emissions ¹¹ and Table 2.14. Lifetimes, radiative efficiencies and direct (except for CH ₄) GWPs relative to CO ₂ . For ozone-depleting substances and their replacements, data are taken from IPCC/TEAP (2005) unless otherwise indicated.				

⁸ IPCC (1996): Climate Change 1995. Table 4: Global Warming Potential referenced to the updated decay response for the Bern carbon cycle model and future CO₂ atmospheric concentrations held constant at current levels.

https://www.ipcc.ch/site/assets/uploads/2018/02/ipcc_sar_wg_1_full_report.pdf

⁹ IPCC. (2007). Climate Change 2007 - The Physical Science Basis Contribution of Working Group I to the Fourth Assessment Report of the IPCC. (Table TS.2). Available (12 March 2021) at: https://www.ipcc.ch/site/assets/uploads/2018/05/ar4_wg1_full_report-1.pdf; <https://www.ipcc.ch/site/assets/uploads/2018/05/ar4-wg1-errata.pdf>

¹⁰ IPCC (2007) Chapter 8 Anthropogenic and Natural Radiative Forcing: Appendix 8.A: Lifetimes, Radiative Efficiencies and Metric Values (Table 8.A.1.) https://www.ipcc.ch/site/assets/uploads/2018/02/WG1AR5_Chapter08_FINAL.pdf; https://www.ipcc.ch/site/assets/uploads/2018/02/WG1AR5_Chapter08_FINAL.pdf#page=73

¹¹ <https://www.ipcc.ch/site/assets/uploads/2018/02/ar4-wg1-chapter2-1.pdf>

1.B.2.b.iv	Preparation of data set related to pipeline length which are in operation			AD	Transparency	high
1.B.2.b.iv	Preparation of data set related to applied equipment and technology for natural gas transmission and storage			AD	Transparency	medium
1.B.2.b.iv	Investigation for transmission and storage on share of - most activities occurring with higher-emitting technologies and practices. - most activities occurring with lower-emitting technologies and practices.			AD	Accuracy Transparency	high
Note	AD	Activity data	EF	Emission factor	M	Method

2 References

Folder	\07_NIR\2024_NID\17_References
File	NID_Algeria_2024_references.docx 1B2_Fugitive_emissions_DZA.xlsx Information_OPEC.xlsx
NID CHAPTER	3.3.2 Oil and Natural Gas (CRT category 1.B.2)
ToDo	Check for updated references in chapter 3.3 Fugitive emissions from fuels (CRT category 1.B)

2.1 References – General

EUROPEAN ENVIRONMENT AGENCY - EEA (2019): EMEP/EEA air pollutant emission inventory guidebook 2019. EEA Report No 21/2019. Copenhagen, Denmark.

Available (12 January 2022) on <https://www.eea.europa.eu/publications/emep-eea-guidebook-2016>

INTERGOVERNMENTAL PANEL ON CLIMATE CHANGE – IPCC (1997). IPCC software for the 1996 Guidelines has been updated by the UNFCCC to include the GPG LULUCF.

Available (12 January 2022) on <https://unfccc.int/greenhouse-gas-inventory-software-for-non-annex-i-parties-naiis>

INTERGOVERNMENTAL PANEL ON CLIMATE CHANGE – IPCC (2000). Good Practice Guidance and Uncertainty Management in National Greenhouse Gas Inventories. Penman, J., Kruger, D., Galbally, I., Hiraishi, T., Nyenzi, B., Enmanuel, S., Buendia, L., Hoppaus, R., Martinsen, T., Meijer, J., Miwa, K. and Tanabe, K. (Eds). Intergovernmental Panel on Climate Change (IPCC), IPCC/OECD/IEA/IGES, Hayama, Japan.

Available (12 January 2022) on <https://www.ipcc-nggip.iges.or.jp/public/gp/english/index.html>

INTERGOVERNMENTAL PANEL ON CLIMATE CHANGE – IPCC (2003). Good Practice Guidance for Land Use, land-Use Change and Forestry. Penman, J., Gytarsky, M., Hiraishi, T., Kruger, D., Pipatti, R., Buendia, L., Miwa, K., Ngara, T., Tanabe, K. and Wagner, F. (Eds). Intergovernmental Panel on Climate Change (IPCC), IPCC/IGES, Hayama, Japan.

Available (12 January 2022) on <https://www.ipcc-nggip.iges.or.jp/public/gpglulucf/gpglulucf.html>

INTERGOVERNMENTAL PANEL ON CLIMATE CHANGE - IPCC (2014): Climate Change 2014: Synthesis Report. Contribution of Working Groups I, II and III to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change [Core Writing Team, R.K. Pachauri and L.A. Meyer (eds.)]. IPCC, Geneva, Switzerland, 151 pp

Available (12 January 2022) on <https://www.ipcc.ch/report/ar5/syr/> and https://www.ipcc.ch/site/assets/uploads/2018/02/SYR_AR5_FINAL_full.pdf

- INTERGOVERNMENTAL PANEL ON CLIMATE CHANGE – IPCC (2006): 2006 IPCC Guidelines for National Greenhouse Gas Inventories, Prepared by the National Greenhouse Gas Inventories Programme, Eggleston H.S., Buendia L., Miwa K., Ngara T. and Tanabe K. (eds). Published: IGES, Japan.
- Available (12 January 2022) on <https://www.ipcc-nggip.iges.or.jp/public/2006gl/>
- INTERGOVERNMENTAL PANEL ON CLIMATE CHANGE – IPCC (2007): IPCC Fourth Assessment Report (AR4). Climate Change 2007 - The Physical Science Basis Contribution of Working Group I to the Fourth Assessment Report of the IPCC. (Table TS.2).
- Available (12 January 2022) at:
https://www.ipcc.ch/site/assets/uploads/2018/05/ar4_wg1_full_report-1.pdf
- INTERGOVERNMENTAL PANEL ON CLIMATE CHANGE – IPCC (2014): 2013 Supplement to the 2006 IPCC Guidelines for National Greenhouse Gas Inventories: Wetlands, Hiraishi, T., Krug, T., Tanabe, K., Srivastava, N., Baasansuren, J., Fukuda, M. and Troxler, T.G. (eds). Published: IPCC, Switzerland.
- Available (12 January 2022) on <https://www.ipcc-nggip.iges.or.jp/public/wetlands/index.html>
- INTERGOVERNMENTAL PANEL ON CLIMATE CHANGE - IPCC (2018): Global Warming of 1.5°C. An IPCC Special Report on the impacts of global warming of 1.5°C above pre-industrial levels and related global greenhouse gas emission pathways, in the context of strengthening the global response to the threat of climate change, sustainable development, and efforts to eradicate poverty [Masson-Delmotte, V., P. Zhai, H.-O. Pörtner, D. Roberts, J. Skea, P.R. Shukla, A. Pirani, W. Moufouma-Okia, C. Péan, R. Pidcock, S. Connors, J.B.R. Matthews, Y. Chen, X. Zhou, M.I. Gomis, E. Lonnoy, T. Maycock, M. Tignor, and T. Waterfield (eds.)]. Published: IPCC, Switzerland.
- Available (12 January 2022) on <https://www.ipcc.ch/sr15/>
- INTERGOVERNMENTAL PANEL ON CLIMATE CHANGE – IPCC (2019): 2019 Refinement to the 2006 IPCC Guidelines for National Greenhouse Gas Inventories, Calvo Buendia, E., Tanabe, K., Kranjc, A., Baasansuren, J., Fukuda, M., Ngarize S., Osako, A., Pyrozhenko, Y., Shermanau, P. and Federici, S. (eds). Published: IPCC, Switzerland.
- Available (12 January 2022) on <https://www.ipcc-nggip.iges.or.jp/public/2019rf/vol1.html>
- INTERGOVERNMENTAL PANEL ON CLIMATE CHANGE - IPCC (2019): IPCC Inventory Software User Manual Version 2.69. Compiled by: SPIRIT Inc., Bratislava, Slovak Republic, January 2013. Supervised by: Technical Support Unit of the IPCC Task Force on National Greenhouse Gas Inventories Revised: September 2019 (Version 2.69). Published: IPCC, Switzerland.
- Available (12 January 2022) on <https://www.ipcc-nggip.iges.or.jp/software/index.html>
- INTERGOVERNMENTAL PANEL ON CLIMATE CHANGE - IPCC (2019): IPCC Emission Factor Database - EFDB. Version 3.0. Supporting material prepared for consideration by the Intergovernmental Panel on Climate Change. Compiled by: SPIRIT Inc., Bratislava, Slovak Republic Supervised by: Technical Support Unit of the IPCC Task Force on National Greenhouse Gas Inventories Published: IPCC, Switzerland.
- Available (12 January 2022) on <https://www.ipcc-nggip.iges.or.jp/EFDB/main.php>
- REPUBLIQUE ALGERIENNE DEMOCRATIQUE ET POPULAIRE MINISTERE DE L'AMENAGEMENT DU TERRITOIRE ET DE L'ENVIRONNEMENT (2001): Inventaire national des emissions de gaz a effet de serre. Projet National ALG/98/G31 Elaboration de la stratégie et du plan d'action national des changements climatiques. Alger.

- RAPPORT D'INVENTAIRE NATIONAL DES GAZ A EFFET DE SERRE Volume 1
https://unfccc.int/sites/default/files/resource/inventaire-volume1_0.pdf
- INVENTAIRE NATIONAL DES EMISSIONS DE GAZ A EFFET DE SERRE Volume 2 Feuilles de calcul
https://unfccc.int/sites/default/files/resource/inventaire-volume2_0.pdf
- INVENTAIRE NATIONAL DES EMISSIONS DE GAZ A EFFET DE SERRE - TABLE DES MATIERES
https://unfccc.int/sites/default/files/resource/Inventaire-entetesommaire_0.pdf

REPUBLIQUE ALGERIENNE DEMOCRATIQUE ET POPULAIRE - MINISTERE DE L'AMENAGEMENT DU TERRITOIRE, DE L'ENVIRONNEMENT ET DU TOURISME (2010): Inventaire national des émissions de gaz à effet de serre de l'année 2000. Projet 00039149/GEF/PNUD. Alger.

Available (12 January 2022) on <https://unfccc.int/documents/67404>;
https://unfccc.int/sites/default/files/resource/Algeria_GHG%20Inventory.pdf

UNITED NATIONS (2018): International Recommendations for Energy Statistics (IRES). Department of Economic and Social Affairs, Statistics Division. Statistical Papers. Series M No. 93, ST/ESA/STAT/SER.M/93. New York.

Available (12 January 2022) on <https://unstats.un.org/unsd/energystats/methodology/ires/>

UNITED NATIONS (2021): Energy Balance of Algeria. New York.

Available (15 March 2022) on <http://data.un.org/Default.aspx>;
<http://data.un.org/Explorer.aspx?d=EDATA&f=cmID%3aBC>

2.2 References of Energy

Ministry of Energy and Mines (2022) : Consommation énergétique du secteur de l'énergie 2010-2020. Algérie. : Consommation énergétique du secteur de l'énergie finale le 03.06.2021.xlsx

REPUBLIQUE ALGERIENNE DEMOCRATIQUE ET POPULAIRE - MINISTERE DE L'ENERGIE ET DES MINES (2012) : Décision n°271 du 27 décembre 2012 fixant les unités des mesure et taux de conversion utilisés en matière des reporting et de circulation de l'information statistique dans le secteur de l'énergie et des mines.

Available (10 September 2022) on
<https://www.energy.gov.dz/?rubrique=textes-legislatifs-et-reglementaires> .

European Commission - Joint Research Centre (EC-JRC) (2013) JRC Reference Report: Best Available Techniques (BAT) Reference Document for Iron and Steel Production. Table 5.2: Input and output data from coke oven plants in different EU Member States from 2005 complemented by other references.

Available (10 October 2022) on
https://eippcb.jrc.ec.europa.eu/sites/default/files/2019-11/IS_Adopted_03_2012.pdf.

Environmental accounts of refinery processes, Best Available Techniques (BAT) Reference Document for the Refining of Mineral Oil and Gas (2015). Table 3.1.

Available (22 September 2022) on
https://eippcb.jrc.ec.europa.eu/sites/default/files/2019-11/REF_BREF_2015.pdf .

Organization of the Petroleum Exporting Countries (2022) Oil and natural gas data

Available (22 September 2022) on https://asb.opec.org/data/ASB_Data.php

Eurostat Statistics Explained (2022) Energy balance new methodology.

Available (10 July 2022) on https://ec.europa.eu/eurostat/statistics-explained/index.php?title=Energy_balance_new_methodology#What_is_an_energy_balance.3F

RAPPORT ANNUEL DE SONATRACH (2021)

Available (10 September 2022) on <https://sonatrach.com/rapports>.

Report of the Conference of the Parties on its seventeenth session (2011) Action taken by the Conference of the Parties at its seventeenth session.

Available (10 September 2022) on <https://unfccc.int/resource/docs/2011/cop17/eng/09a01.pdf>.

Energy Statistics International Recommendations for Energy Statistics (IRES) (2022)

Available (10 July 2022) on <https://unstats.un.org/unsd/energystats/methodology/ires/>.

International Energy Agency (2022) Data and statistics

Available (10 July 2022) on <https://www.iea.org/reports/energy-statistics-manual>

ONS (2022) : Statistiques Economiques - Energie (different years). Algiers.

Available (10 September 2022) on <https://www.ons.dz/spip.php?rubrique6>.

ONS (2022) : L'Algérie en Quelques Chiffres - Résultats (different years). Algiers.

Available (10.09.2022) on <https://www.ons.dz/spip.php?rubrique127>

Société Algérienne de l'électricité et du gaz (2022) CHIFFRES CLES

Available (10.09.2022) on <https://www.sonelgaz.dz/fr>

The International Standard Industrial Classification of All Economic Activities (2022)

Available (10.09.2022) on <https://unstats.un.org/unsd/classifications/Econ/isic>

Ministère de l'énergie et des Mines & Ministère de l'Environnement & GIZ (2021): Workshop Report – Development of a country specific emission factor (CS EF) for natural gas. Algiers.

Ministère de l'Énergie et des Mines (2022) Bilan Énergétique National - (different years)

Available (10 September 2022) on

<https://www.energy.gov.dz/?article=bilan-energetique-national-du-secteur>.

OPEC (2022): Oil data: downstream - Refinery capacity in OPEC Members by company and location. Table 4.1.

Available (10 September 2022) on https://asb.opec.org/data/ASB_Data.php.

Shariket Kahraba wa Taket Moutajadida Sonelgaz (2022) Carte des centrales d'électricité.

Available (23 September 2022) on <https://www.sonelgaz.dz/fr/3434/electricite-2>

Connaissance des Energies (2022) Données chiffrées.

Available (10 September 2022) on

<https://www.connaissancedesenergies.org/donnees-chiffrees-energies>.

The World Bank (2022) International Civil Aviation Organization, Civil Aviation Statistics of the World and ICAO staff estimates.

Available (02 October 2022) on <https://data.worldbank.org/indicator/IS.AIR.PSGR?view=chart>

United Nations (2022) Department of Economic and Social Affairs - Statistics Division Statistics - Energy Statistics

Available (02 October 2022) on <https://unstats.un.org/unsd/energystats/>.