

SBSTA agenda item 11(a)

Common reporting tables for the electronic reporting of information in the national inventory reports of anthropogenic emissions by sources and removals by sinks of greenhouse gases

Informal note by the co-facilitators

7 December 2019, 14:30

Note: The draft elements contained in this informal note have been prepared by the co-facilitators of the negotiations on this agenda sub-item under their own responsibility. The draft elements have been drawn from views submitted by Parties prior to and during the fiftieth and fifty-first session and further discussion among Parties at the fiftieth and fifty-first sessions of the Subsidiary Body for Scientific and Technological Advice. The elements are preliminary, are not exhaustive, have no formal status and should not be considered as final in any way. They are intended to assist the Subsidiary Body for Scientific and Technological Advice in advancing the discussions on this matter and do not prejudge further work or prevent Parties from expressing their views at any time.

Overview of the informal consultations on this agenda sub-item

The informal consultations on agenda sub-item 11(a) “Common reporting tables for the electronic reporting of the information in the national inventory reports of anthropogenic emissions by sources and removals by sinks of greenhouse gases”, at this session were co-facilitated by Xiang Gao (China) and Helen Plume (New Zealand).

The co-facilitators prepared this informal note under their own responsibility for Parties’ consideration. It reflects the views provided in submissions on relevant matters by Parties and groups of Parties as at 5 December 2019, and the views shared during the informal consultations at the session. It also reflects the informal note prepared by co-facilitators during the fiftieth session of the Subsidiary Body for Scientific and Technological Advice (SBSTA) 50.¹

Elements considered

Discussions at this session focused on the following questions:

- Is there a specific set of tables that could serve as a basis for further work?
- What is the structure and content of the tables?
- How should the flexibility provisions contained in the modalities, procedures and guidelines (MPGs) for the transparency framework for action and support referred to in Article 13 of the Paris Agreement² for those developing country Parties that need them in the light of their capacities be considered in the reporting of information in the common reporting tables (CRTs)?
- Should discussions be limited to the structure and content of the CRTs, or should considerations related to possible future software tools be taken into account?

The need for capacity-building to support developing countries’ reporting was an underlying theme of the discussions.

Parties’ views on each of these questions are captured below. Annex I contains information on flexibility for those developing country Parties that need it in the light

¹ Available at <https://unfccc.int/documents/196730>.

² Decision 18/CMA.1, annex.

of their capacities, and options for implementing these flexibilities, as included in Parties' submissions as at 5 December 2019 in response to the request in the previous SBSTA conclusions (para. 125).³ Annex II contains the summary and trend tables that could be the basis for further work after this session. Annex III contains examples illustrating how the options for implementing the flexibility provisions mentioned in annex I, could be implemented in the CRTs. Annex IV contains links to relevant background information and the presentations given by the secretariat at this session.

The issues identified below do not prejudice the outcome of any further discussion on CRTs; rather, they are intended to help Parties recall areas of discussion and summarise Parties' views.

Updated information on the elements considered

Specific set of tables that could serve as a basis for further work

- The group considered the common reporting format (CRF) tables, as contained in the annex to decision 24/CP.19 (“Guidelines for the preparation of national communications by Parties included in Annex I to the Convention, Part I: UNFCCC reporting guidelines on annual greenhouse gas inventories”) and tables 1 and 2 in the annex to decision 17/CP.8 (“Guidelines for the preparation of national communications from Parties not included in Annex I to the Convention”);⁴
- During the session, the group discussed the way forward in order to progress on work under this agenda sub-item. The tables contained in annex I could be the basis for further work after this session. The group also supported that further work should focus on identifying revisions to these tables that are consistent with the provisions in the MPGs;
- The principles to be applied include transparency, accuracy, completeness, consistency, comparability, avoidance of backsliding, minimization of undue burden, consistency with the MPGs, efficiency, and recognition of existing practice and experience.

Structure and content of the tables

- The structure and content of the CRTs that were considered during SBSTA 50 and 51, including the following elements:
 - Summary tables, including:
 - Emissions/removals by sector/category;
 - Emission/removal trends for the time series;
 - Sectoral tables, including:
 - Sectoral background data tables containing activity data, emissions/removals and implied emission factors as well as additional information (information items, documentation boxes, explanatory footnotes);
 - Sectoral report tables containing emissions/removals.

³ Document FCCC/SBSTA/2019/2, para. 125.

⁴ Table 1 is titled “National greenhouse gas inventory of anthropogenic emissions by sources and removals by sinks of all greenhouse gases not controlled by the Montreal Protocol and greenhouse gas precursors”, and table 2 is titled “National greenhouse gas inventory of anthropogenic emissions of HFCs, PFCs and SF₆”.

- The summary and trend tables that were considered during this session are based on the current reporting tables for developed and developing countries. The tables contained in annex II reflect the progress achieved during this session and could be used for further work.
- There were different views expressed by Parties regarding the reporting of sectoral background data tables, including whether these tables are mandatory or not for all Parties in accordance to the MPGs. The group did not have sufficient time to consider the following:
 - Other sectoral tables containing sector-specific information (e.g. reference approach, land-transition matrix);
 - Other cross-sectoral tables summarizing quantitative and/or qualitative information (e.g. indirect emissions, key categories, recalculations).

Options for implementing the flexibility provisions contained in the modalities, procedures and guidelines in common reporting tables

- Several options for incorporating the flexibility provisions were discussed. The list below capture such options, with the understanding that this may not be exhaustive and options may not be mutually exclusive:
 - Footnotes to the CRTs to explain where a flexibility provision in the MPGs exists;
 - Existing notation keys or a new notation key;
 - Documentation boxes;
 - A table to report on flexibilities used by a Party;
 - Hiding blank columns or rows of tables
 - Removing or hiding rows, columns or tables
 - Narrative descriptions in the national inventory document.
- In addition, the co-facilitators prepared a list of flexibility provisions included in chapter II of the MPGs to assist Parties in addressing this matter, including options identified in Parties' submissions during this session. This information was considered during this session and is included in annex I.

Should discussions be limited to the structure and content of the common reporting tables, or should considerations related to possible future software tools be taken into account?

- During SBSTA 50, the group discussed the CRTs and software tools and considered the following:
 - As a first step, to focus on the CRTs;
 - As a second step, to discuss tables together with more background information on the software tools that are currently used by Parties to facilitate reporting.

Need for support to developing countries' reporting and related capacity building

- The group recognized that capacity-building for developing country Parties is essential to facilitating reporting in accordance with the enhanced transparency framework. In addition, some Parties noted the need for support to developing country Parties for implementation.

- Developing countries noted that they have limited or no experience with CRF tables for developed countries reporting or the use of the data entry interface software tool (CRF Reporter), and expressed the need for capacity-building in that regard. The following options were proposed:
 - Sharing of experience by Parties that have experience in reporting CRF tables;
 - Continueing to grant access to CRF Reporter to developing countries that so request it to enable them to gain experience with the software; SBSTA 50 invited interested developing country Parties to request access to the CRF Reporter, through the secretariat, in order to familiarize themselves with the tool.⁵

⁵ Document FCCC/SBSTA/2019/2, paras. 127 and 128.

Annex I: Flexibility

This annex contains information on the provision of flexibility to those developing country Parties that need it in the light of their capacities. It includes two parts.

Part 1: general information on the provision of flexibility to those developing country Parties that need it in the light of their capacities, as contained in decision 18/CMA.1, annex (“Modalities, procedures and guidelines for the transparency framework for action and support referred to in Article 13 of the Paris Agreement”), chapter I.C;

Part 2: a list of the specific flexibility provisions in decision 18/CMA.1, annex, chapter II.

Part 1: General information on the provision of flexibility to those developing country Parties that need it in the light of their capacities

I.C. Flexibility to those developing country Parties that need it in the light of their capacities

4. In accordance with Article 13, paragraph 2, of the Paris Agreement, the enhanced transparency framework shall provide flexibility in the implementation of the provisions of Article 13 to those developing country Parties that need it in the light of their capacities, and these modalities, procedures and guidelines (MPGs) shall reflect such flexibility.

5. These MPGs specify the flexibility that is available to those developing country Parties that need it in the light of their capacities pursuant to Article 13, paragraph 2, reflecting flexibility, including in the scope, frequency and level of detail of reporting, and in the scope of the review, as referred to decision 1/CP.21, paragraph 89.

6. The application of a flexibility provided for in the provisions of these MPGs for those developing country Parties that need it in the light of their capacities is to be self-determined. The developing country Party shall clearly indicate the provision to which flexibility is applied, concisely clarify capacity constraints, noting that some constraints may be relevant to several provisions, and provide self-determined estimated time frames for improvements in relation to those capacity constraints. When a developing country Party applies flexibility provided for in these MPGs, the technical expert review teams shall not review the Party’s determination to apply such flexibility or whether the Party possesses the capacity to implement that specific provision without flexibility.

Part 2

Flexibility provisions in decision 18/CMA.1, annex, chapter II (“National inventory report of anthropogenic emissions by sources and removals by sinks of greenhouse gases”) and options for implementing these flexibilities, as included in Parties’ submissions

Elements in submissions	Reference in annex to decision 18/CMA.1	Provision in the MPGs	Flexibility provision for those developing country Parties that need it in the light of their capacities	Options for operationalizing flexibility in Parties' submissions of the common reporting tables (CRTs)	Options for operationalizing flexibility in Parties' submissions of the national inventory document (NID)/biennial transparency report (BTR)
General comments	NA	NA	NA	<ul style="list-style-type: none"> ● Colouring of cells ● Deletion of columns, rows, elements or sections ● Documentation boxes ● Drop-down menu ● Footnotes ● Notation keys (existing) ● Notation keys (new: F, FP, FX, NE*, NR) ● Report tabular formats for relevant years ● Sectoral background data tables not mandatory for developing country Parties ● Combination of the above elements 	<ul style="list-style-type: none"> ● Narrative descriptions ● A table indicating whether and how each type of flexibility is used
Key category analysis	§25	95 per cent threshold	No lower than 85 per cent threshold	<ul style="list-style-type: none"> ● Additional cell (indicating threshold) ● Documentation boxes ● Footnotes 	<ul style="list-style-type: none"> ● Narrative descriptions
Uncertainty assessment	§29	Quantitatively estimate and qualitatively discuss (the starting year, the latest	At a minimum, a qualitative discussion of uncertainty for key categories		<ul style="list-style-type: none"> ● Narrative descriptions

Elements in submissions	Reference in annex to decision 18/CMA.1	Provision in the MPGs	Flexibility provision for those developing country Parties that need it in the light of their capacities	Options for operationalizing flexibility in Parties' submissions of the common reporting tables (CRTs)	Options for operationalizing flexibility in Parties' submissions of the national inventory document (NID)/biennial transparency report (BTR)
		reporting year, and trend)			
Use of the notation key "NE" (not estimated)	§32	<p>A category should only be considered insignificant if the likely level of emissions is below 0.05 per cent of the national total greenhouse gas (GHG) emissions, excluding land use, land-use change and forestry (LULUCF), or 500 kt CO₂ eq, whichever is lower</p> <p>The total national aggregate of estimated emissions for all gases from categories considered</p>	<p>The flexibility to consider emissions insignificant if the likely level of emissions is below 0.1 per cent of the national total GHG emissions, excluding LULUCF, or 1,000 kt CO₂ eq, whichever is lower</p> <p>The total national aggregate of estimated emissions for all gases from categories considered insignificant, in this case, shall remain below 0.2 per cent of the national total GHG emissions, excluding LULUCF</p>	<ul style="list-style-type: none"> ● Additional cells or drop-down menu (indicating threshold) ● Additional column to key category analysis table to describe the related capacity constraints ● Explanation in a cell of the table in CRT (similar to CRF table 9 (explanation of sources/sinks reported as "NE" or "IE")) ● Footnotes 	<ul style="list-style-type: none"> ● Narrative descriptions in section/chapter of relevant sources/sinks

Elements in submissions	Reference in annex to decision 18/CMA.1	Provision in the MPGs	Flexibility provision for those developing country Parties that need it in the light of their capacities	Options for operationalizing flexibility in Parties' submissions of the common reporting tables (CRTs)	Options for operationalizing flexibility in Parties' submissions of the national inventory document (NID)/biennial transparency report (BTR)
		insignificant shall remain below 0.1 per cent of the national total GHG emissions, excluding LULUCF			
Quality assurance (QA)/ quality control (QC)	§34	Elaborate an inventory QA/QC plan	Encouragement to elaborate an inventory QA/QC plan		<ul style="list-style-type: none"> ● Narrative descriptions
General inventory QC procedure	§35	Implement and provide information on general inventory QC procedures	Encouragement to implement and provide information on general inventory QC procedures		<ul style="list-style-type: none"> ● Narrative descriptions
Sectors and gases	§48	Report seven gases: CO ₂ , CH ₄ , N ₂ O, HFCs, PFCs, SF ₆ and NF ₃	Report at least three gases (CO ₂ , CH ₄ and N ₂ O) as well as any of the additional four gases (HFCs, PFCs, SF ₆ and NF ₃) that are included in the Party's nationally determined contribution (NDC) under Article 4 of the Paris Agreement, are covered by an activity under Article 6 of the Paris Agreement, or have been previously reported	<ul style="list-style-type: none"> ● Footnotes ● New column in summary table(s) to describe capacity constraint ● Notation keys (existing) ● Notation keys (new: F, FP, FX, NE*, NR) 	<ul style="list-style-type: none"> ● Narrative descriptions (in combination with notation keys in CRTs)

Elements in submissions	Reference in annex to decision 18/CMA.1	Provision in the MPGs	Flexibility provision for those developing country Parties that need it in the light of their capacities	Options for operationalizing flexibility in Parties' submissions of the common reporting tables (CRTs)	Options for operationalizing flexibility in Parties' submissions of the national inventory document (NID)/biennial transparency report (BTR)
Time series (the starting year, middle years)	§57	Report a consistent annual time series starting from 1990	At a minimum, the reference year/period for its NDC and, in addition, a consistent annual time series from at least 2020 onward	<ul style="list-style-type: none"> ● Footnotes ● Notation keys (existing, e.g. NE) for years not reported ● Notation keys (new: F, FP, FX, NE*, NR) for years not reported 	<ul style="list-style-type: none"> ● Narrative descriptions ● Narrative descriptions (if time series does not start from 1990)
Time series (the latest reporting year)	§58	No more than two years prior to the submission of the national inventory report	No more than three years prior to the submission of the national inventory report	<ul style="list-style-type: none"> ● Footnotes ● Notation keys (existing, e.g. NE) for years not reported ● Notation keys (new: F, FP, FX, NE*, NR) for years not reported 	<ul style="list-style-type: none"> ● Narrative descriptions

Annex II: Tables that could serve as the basis/starting point for further work⁶

Summary and trend tables

SUMMARY 1 SUMMARY REPORT FOR NATIONAL GREENHOUSE GAS INVENTORIES

Year

GREENHOUSE GAS SOURCE AND SINK CATEGORIES	Net CO ₂ emissions/ removals	CH ₄	N ₂ O	HFCs ⁽¹⁾ (b table 2, 17/CP.8)	PFCs ⁽¹⁾ (b table 2, 17/CP.8)	Unspecified mix of HFCs and PFCs ⁽²⁾	SF ₆	NF ₃	NO _x	CO	NMVOC	SO _x
	(kt)			(kt CO ₂ equivalent)								
947 of IPCC request unit of mass												
Total national emissions and removals												
1. Energy												
1.A. Fuel combustion (Reference approach) ⁽³⁾												
(Sectoral approach) ⁽³⁾												
1.A.1. Energy industries												
1.A.2. Manufacturing industries and construction												
1.A.3. Transport												
1.A.4. Other sectors												
1.A.5. Other												
1.B. Fugitive emissions from fuels												
1.B.1. Solid fuels												
1.B.2. Oil and natural gas and other emissions from energy production												
1.C. CO ₂ Transport and storage												
2. Industrial processes and product use												
2.A. Mineral industry												
2.B. Chemical industry												
2.C. Metal industry												
2.D. Non-fluorinated products from fuels and solvent use												
2.E. Electronic industry												
2.F. Product uses as substitutes for CFCs												
2.G. Other product manufacture and use												
2.H. Other ⁽⁴⁾												
3. Agriculture												
3.A. Enteric fermentation												
3.B. Manure management												
3.C. Rice cultivation												
3.D. Agricultural soils												
3.E. Prescribed burning of savannahs												
3.F. Field burning of agricultural residues												
3.G. Linting												
3.H. Urea application												
3.I. Other carbon-containing fertilizers												
3.J. Other												
4. Land use, land-use change and forestry⁽⁵⁾												
4.A. Forest land ⁽⁶⁾												
4.B. Cropland ⁽⁷⁾												
4.C. Grassland ⁽⁸⁾												
4.D. Wetlands ⁽⁹⁾												
4.E. Settlements ⁽¹⁰⁾												
4.F. Other land ⁽¹¹⁾												
4.G. Harvested wood products ⁽¹²⁾												
4.H. Other ⁽¹³⁾												
5. Waste												
5.A. Solid waste disposal ⁽¹⁴⁾												
5.B. Biological treatment of solid waste												
5.C. Incineration and open burning of waste ⁽¹⁵⁾												
5.D. Wastewater treatment and discharge												
5.E. Other ⁽¹⁶⁾												
6. Other (please specify)⁽¹⁷⁾												
Memo Items⁽¹⁸⁾												
International bunkers												
Aviation												
Navigation												
Multilateral operations												
CO ₂ emissions from biomass												
CO ₂ captured												
Land-fill storage of C in waste disposal sites												
Indirect N ₂ O												
Indirect CO ₂												

⁽¹⁾ The emissions of hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), unspecified mix of HFCs and PFCs and other fluorinated gases are to be expressed as carbon dioxide (CO₂) equivalent emissions. Data on disaggregated emissions of HFCs and PFCs are to be provided in table 2(H) of this common reporting format.

⁽²⁾ For verification purposes, Parties are requested to report the results of their calculations using the Reference approach and to explain any differences with the Sectoral approach in the documentation box to table 1.A(c). For estimating national total emissions, the results from the Sectoral approach should be used.

⁽³⁾ For the purposes of reporting, the signs for removals are always negative (-) and for emissions positive (+).

⁽⁴⁾ 2.H. Other includes pulp and paper and food and beverage industry.

⁽⁵⁾ CO₂ from categories solid waste disposal on land and waste incineration should only be included if it stems from non-biogenic or inorganic waste streams. Only emissions from waste incineration without energy recovery are to be reported in the waste sector, whereas emissions from incineration with energy recovery are to be reported in the energy sector.

⁽⁶⁾ If reporting any country-specific category under sector "5. Other", detailed explanations should be provided in Chapter 8: Other (CRF sector 6) of the national inventory report (NIR).

⁽⁷⁾ Parties are asked to report emissions from international aviation and international navigation and multilateral operations, as well as CO₂ emissions from biomass and CO₂ captured, under Memo Items. These emissions should not be included in the national total emissions from the energy sector. Amounts of biomass used as fuel are included in the national energy consumption but the corresponding CO₂ emissions are not included in the national total as it is assumed that the biomass is produced in a sustainable manner. If the biomass is harvested at an unsustainable rate, net CO₂ emissions are accounted for as a loss of biomass stocks in the Land Use, Land-use Change and Forestry sector.

⁽⁸⁾ (table 2, 17/CP.8) Parties reporting HFCs and PFCs should provide emission estimates on a gas-by-gas basis, that is, disaggregated estimates by chemical expressed in units of mass (Gg), as indicated in the table (e.g. HFC-23), where information is available. This should be done by inserting a column for each HFC and PFC gas for which emissions do occur in the country; the gases in the column headings are given as examples only. Other gases to be reported in this table include HFC-32, HFC-41, HFC-43-10, HFC-125, HFC-134a, HFC-152a, HFC-153a, HFC-154a, HFC-143a, HFC-227ea, HFC-236fa, HFC-245ca, C₂F₆, C₂F₄, C₃F₈, C₃F₆, C₄F₁₀, C₄F₈, C₄F₆, and any other GHG with high global warming potential not covered in this list.

⁶ Some reporting elements showed in the tables below may not be fully consistent with the reporting requirements for GHG inventories of the modalities, procedures and guidelines for the transparency framework and/or the methodological guidance provided in the 2006 IPCC Guidelines.

TABLE 2(II) SECTORAL REPORT FOR INDUSTRIAL PROCESSES AND PRODUCT USE - EMISSIONS OF HFCs, PFCs, SF₆ AND NF₃
(Sheet 1 of 1)

Year
Submission
Country

GREENHOUSE GAS SOURCE AND SINK CATEGORIES	HFC-23	HFC-32	HFC-41	HFC-43-10misc	HFC-125	HFC-134	HFC-134a	HFC-143	HFC-143a	HFC-152	HFC-152a	HFC-161	HFC-227ea	HFC-236eb	HFC-236ea	HFC-236fa	HFC-245ea	HFC-245fa	HFC-365mfc	Unspecified mix of HFCs ⁽¹⁾	Total HFCs	CF ₄	C ₂ F ₆	C ₃ F ₈	C ₄ F ₈	e-C ₂ F ₄	C ₃ F ₄	C ₆ F ₄	C ₈ F ₆	e-C ₈ F ₆	Unspecified mix of PFCs ⁽¹⁾	Total PFCs	Unspecified mix of HFCs and PFCs ⁽¹⁾	SF ₆	NF ₃			
	(t)																				CO ₂ equivalent (kt)	(t)						CO ₂ equivalent (kt)	(t)									
Total actual emissions of halocarbons (by chemical) and SF₆																																						
2.B. Chemical industry																																						
2.B.9. Fluorochemical production																																						
2.B.9.a. By-product emissions																																						
2.B.9.b. Fugitive emissions																																						
2.B.10. Other																																						
2.C. Metal industry																																						
2.C.3. Aluminium production																																						
2.C.4. Magnesium production																																						
2.C.7. Other																																						
2.E. Electronics industry																																						
2.E.1. Integrated circuit or semiconductor																																						
2.E.2. TFT flat panel display																																						
2.E.3. Photovoltaics																																						
2.E.4. Heat transfer fluid																																						
2.E.5. Other (as specified in table 2(II))																																						
2.F. Product uses as substitutes for ODS⁽²⁾																																						
2.F.1. Refrigeration and air conditioning																																						
2.F.2. Foam blowing agents																																						
2.F.3. Fire protection																																						
2.F.4. Aerosols																																						
2.F.5. Solvents																																						
2.F.6. Other applications																																						
2.G. Other product manufacture and use																																						
2.G.1. Electrical equipment																																						
2.G.2. SF ₆ and PFCs from other product use																																						
2.G.4. Other																																						
2.H. Other (please specify)																																						
Total emissions⁽³⁾																																						
2.B. Chemical industry																																						
2.C. Metal production																																						
2.E. Electronics industry																																						
2.F. Product uses as substitutes for ODS																																						
2.G. Other product manufacture and use																																						
2.H. Other																																						

⁽¹⁾ In accordance with the UNFCCC reporting guidelines, emissions of hydrofluorocarbons (HFCs) and perfluorocarbons (PFCs), unspecified mix of HFCs and PFCs and other fluorinated gases should be reported for each relevant chemical. However, if it is not possible to report values for each chemical (i.e. owing to mixtures, confidential data, lack of disaggregation), these columns could be used for reporting aggregate figures for HFCs and PFCs, unspecified mix of HFCs and PFCs and fluorinated gases, respectively. Parties should provide information on global warming potential values used in the national inventory review report. Note that the unit used in these columns is kt of carbon dioxide equivalent (CO₂ eq).

⁽²⁾ ODS ozone-depleting substances

⁽³⁾ Total actual emissions equal the sum of the actual emissions of each halocarbon, sulphur hexafluoride (SF₆) and nitrogen trifluoride (NF₃) from the categories 2.C, 2.E, 2.F, 2.G and 2.H in this table multiplied by the corresponding global warming potential values.

Note: As stated in the UNFCCC reporting guidelines, Parties should report actual emissions of HFCs, PFCs and SF₆ where data are available, providing disaggregated data by chemical and source category in units of mass and in CO₂ eq. Parties reporting actual emissions should also report potential emissions for the sources where the concept of potential emissions applies, for reasons of transparency and comparability.

Documentation box:

Parties should provide detailed explanations on the industrial processes sector in chapter 4: industrial processes (CRF sector 2) of the NIR. Use this documentation box to provide references to relevant sections of the NIR if any additional information and/or further details are needed to understand the content of this table.

If estimates are reported under 2.H Other, use this documentation box to provide information regarding activities covered under this category and to provide a reference to the section of the NIR where background information can be found.

SUMMARY 2 SUMMARY REPORT FOR CO₂ EQUIVALENT EMISSIONS
(Sheet 1 of 1)

Year
Submission
Country

GREENHOUSE GAS SOURCE AND SINK CATEGORIES	CO ₂ ⁽¹⁾	CH ₄	N ₂ O	HFCs	PFCs	SF ₆	Unspecified mix of HFCs and PFCs	NE ₃	Total
	CO ₂ equivalent (kt)								
Total (net emissions)⁽¹⁾									
1. Energy									
1.A. Fuel combustion (sectoral approach)									
1.A.1. Energy industries									
1.A.2. Manufacturing industries and construction									
1.A.3. Transport									
1.A.4. Other sectors									
1.A.5. Other									
1.B. Fugitive emissions from fuels									
1.B.1. Solid fuels									
1.B.2. Oil and natural gas and other emissions from energy production									
1.C. CO ₂ Transport and storage									
2. Industrial processes and product use									
2.A. Mineral industry									
2.B. Chemical industry									
2.C. Metal industry									
2.D. Non-energy products from fuels and solvent use									
2.E. Electronic industry									
2.F. Product uses as substitutes for ODS									
2.G. Other product manufacture and use									
2.H. Other									
3. Agriculture									
3.A. Enteric fermentation									
3.B. Manure management									
3.C. Rice cultivation									
3.D. Agricultural soils									
3.E. Prescribed burning of savannahs									
3.F. Field burning of agricultural residues									
3.G. Liming									
3.H. Urea application									
3.I. Other carbon-containing fertilizers									
3.J. Other									
4. Land use, land-use change and forestry⁽¹⁾									
4.A. Forest land									
4.B. Cropland									
4.C. Grassland									
4.D. Wetlands									
4.E. Settlements									
4.F. Other land									
4.G. Harvested wood products									
4.H. Other									
5. Waste									
5.A. Solid waste disposal									
5.B. Biological treatment of solid waste									
5.C. Incineration and open burning of waste									
5.D. Wastewater treatment and discharge									
5.E. Other									
6. Other (as specified in summary 1)									
Memo items:⁽²⁾									
International bunkers									
Aviation									
Navigation									
Multilateral operations									
CO ₂ emissions from biomass									
CO ₂ captured									
Long-term storage of C in waste disposal sites									
Indirect N₂O									
Indirect CO₂⁽³⁾									
	Total CO₂ equivalent emissions without land use, land-use change and forestry								
	Total CO₂ equivalent emissions with land use, land-use change and forestry excluding natural disturbances								
	Total CO₂ equivalent emissions with land use, land-use change and forestry including natural disturbances								
	Total CO₂ equivalent emissions, including indirect CO₂, without land use, land-use change and forestry								
	Total CO₂ equivalent emissions, including indirect CO₂, with land use, land-use change and forestry excluding natural disturbances								
	Total CO₂ equivalent emissions, including indirect CO₂, with land use, land-use change and forestry including natural disturbances								

⁽¹⁾ For carbon dioxide (CO₂) from land use, land-use change and forestry the net emissions/removals are to be reported. For the purposes of reporting, the signs for removals are always negative (-) and for emissions positive (+).

⁽²⁾ See footnote 7 to table Summary 1.A.

⁽³⁾ In accordance with the UNFCCC Annex I inventory reporting guidelines, for Parties that decide to report indirect CO₂, the national totals shall be provided with and without indirect CO₂.

TABLE 10 EMISSION TRENDS
GHG CO₂ eq emissions
(Sheet 1 of 6)

Year
Submission
Country

GREENHOUSE GAS SOURCE AND SINK CATEGORIES	Base year ⁽¹⁾	1990	(Years 1991 to latest reported year)	Change from base to latest reported year
		(kt CO ₂ eq)		%
Total (net emissions)⁽²⁾				
1. Energy				
1.A. Fuel combustion (sectoral approach)				
1.A.1. Energy industries				
1.A.2. Manufacturing industries and construction				
1.A.3. Transport				
1.A.4. Other sectors				
1.A.5. Other				
1.B. Fugitive emissions from fuels				
1.B.1. Solid fuels				
1.B.2. Oil and natural gas and other emissions from energy production				
1.C. CO ₂ Transport and storage				
2. Industrial processes and product use				
2.A. Mineral industry				
2.B. Chemical industry				
2.C. Metal industry				
2.D. Non-energy products from fuels and solvent use				
2.E. Electronic industry				
2.F. Product uses as substitutes for ODS				
2.G. Other product manufacture and use				
2.H. Other				
3. Agriculture				
3.A. Enteric fermentation				
3.B. Manure management				
3.C. Rice cultivation				
3.D. Agricultural soils				
3.E. Prescribed burning of savannahs				
3.F. Field burning of agricultural residues				
3.G. Liming				
3.H. Urea application				
3.I. Other carbon-containing fertilizers				
3.J. Other				
4. Land use, land-use change and forestry⁽²⁾				
4.A. Forest land				
4.B. Cropland				
4.C. Grassland				
4.D. Wetlands				
4.E. Settlements				
4.F. Other land				
4.G. Harvested wood products				
4.H. Other				
5. Waste				
5.A. Solid waste disposal				
5.B. Biological treatment of solid waste				
5.C. Incineration and open burning of waste				
5.D. Wastewater treatment and discharge				
5.E. Other				
6. Other (please specify)				
Memo items:				
International bunkers				
Aviation				
Navigation				
Multilateral operations				
CO₂ emissions from biomass				
CO₂ captured				
Long-term storage of C in waste disposal sites				
Indirect N₂O				
Indirect CO₂⁽³⁾				
Total CO₂ equivalent emissions without land use, land-use change and forestry				
Total CO₂ equivalent emissions with land use, land-use change and forestry excluding natural disturbances				
Total CO₂ equivalent emissions with land use, land-use change and forestry including natural disturbances				
Total CO₂ equivalent emissions, including indirect CO₂, without land use, land-use change and forestry				
Total CO₂ equivalent emissions, including indirect CO₂, with land use, land-use change and forestry excluding natural disturbances				
Total CO₂ equivalent emissions, including indirect CO₂, with land use, land-use change and forestry including natural disturbances				

Note: All footnotes for this table are given at the end of the table on sheet 6.

TABLE 10 EMISSION TRENDS
CO₂
(Sheet 2 of 6)

Year
Submission
Country

GREENHOUSE GAS SOURCE AND SINK CATEGORIES	Base year ⁽¹⁾	1990	(Years 1991 to latest reported year)	Change from base to latest reported year
		(kt)		%
1. Energy				
1.A. Fuel combustion (sectoral approach)				
1.A.1. Energy industries				
1.A.2. Manufacturing industries and construction				
1.A.3. Transport				
1.A.4. Other sectors				
1.A.5. Other				
1.B. Fugitive emissions from fuels				
1.B.1. Solid fuels				
1.B.2. Oil and natural gas and other emissions from energy production				
1.C. CO ₂ Transport and storage				
2. Industrial processes and product use				
2.A. Mineral industry				
2.B. Chemical industry				
2.C. Metal industry				
2.D. Non-energy products from fuels and solvent use				
2.E. Electronic industry				
2.F. Product uses as substitutes for ODS				
2.G. Other product manufacture and use				
2.H. Other				
3. Agriculture				
3.A. Enteric fermentation				
3.B. Manure management				
3.C. Rice cultivation				
3.D. Agricultural soils				
3.E. Prescribed burning of savannahs				
3.F. Field burning of agricultural residues				
3.G. Liming				
3.H. Urea application				
3.I. Other carbon-containing fertilizers				
3.J. Other				
4. Land use, land-use change and forestry ⁽²⁾				
4.A. Forest land				
4.B. Cropland				
4.C. Grassland				
4.D. Wetlands				
4.E. Settlements				
4.F. Other land				
4.G. Harvested wood products				
4.H. Other				
5. Waste				
5.A. Solid waste disposal				
5.B. Biological treatment of solid waste				
5.C. Incineration and open burning of waste				
5.D. Wastewater treatment and discharge				
5.E. Other				
6. Other (please specify)				
Memo items:				
International bunkers				
Aviation				
Navigation				
Multilateral operations				
CO ₂ emissions from biomass				
CO ₂ captured				
Long-term storage of C in waste disposal sites				
Indirect CO₂ ⁽³⁾				
Total CO₂ emissions without land use, land-use change and forestry				
Total CO₂ emissions with land use, land-use change and forestry excluding natural disturbances				
Total CO₂ emissions with land use, land-use change and forestry including natural disturbances				
Total CO₂ emissions, including indirect CO₂, without land use, land-use change and forestry				
Total CO₂ emissions, including indirect CO₂, with land use, land-use change and forestry excluding natural disturbances				
Total CO₂ emissions, including indirect CO₂, with land use, land-use change and forestry including natural disturbances				

Note: All footnotes for this table are given at the end of the table on sheet 6.

TABLE 10 EMISSION TRENDS
CH₄
(Sheet 3 of 6)

Year
Submission
Country

GREENHOUSE GAS SOURCE AND SINK CATEGORIES	Base year ⁽¹⁾	1990	(Years 1991 to latest reported year)	Change from base to latest reported year
				(kt)
				%
1. Energy				
1.A. Fuel combustion (sectoral approach)				
1.A.1. Energy industries				
1.A.2. Manufacturing industries and construction				
1.A.3. Transport				
1.A.4. Other sectors				
1.A.5. Other				
1.B. Fugitive emissions from fuels				
1.B.1. Solid fuels				
1.B.2. Oil and natural gas and other emissions from energy production				
1.C. CO ₂ Transport and storage				
2. Industrial processes and product use				
2.A. Mineral industry				
2.B. Chemical industry				
2.C. Metal industry				
2.D. Non-energy products from fuels and solvent use				
2.E. Electronic industry				
2.F. Product uses as substitutes for ODS				
2.G. Other product manufacture and use				
2.H. Other				
3. Agriculture				
3.A. Enteric fermentation				
3.B. Manure management				
3.C. Rice cultivation				
3.D. Agricultural soils				
3.E. Prescribed burning of savannahs				
3.F. Field burning of agricultural residues				
3.G. Liming				
3.H. Urea application				
3.I. Other carbon-containing fertilizers				
3.J. Other				
4. Land use, land-use change and forestry				
4.A. Forest land				
4.B. Cropland				
4.C. Grassland				
4.D. Wetlands				
4.E. Settlements				
4.F. Other land				
4.G. Harvested wood products				
4.H. Other				
5. Waste				
5.A. Solid waste disposal				
5.B. Biological treatment of solid waste				
5.C. Incineration and open burning of waste				
5.D. Wastewater treatment and discharge				
5.E. Other				
6. Other (please specify)				
Total CH₄ emissions without CH₄ from LULUCF				
Total CH₄ emissions with CH₄ from LULUCF excluding natural disturbances				
Total CH₄ emissions with CH₄ from LULUCF including natural disturbances				
Memo items:				
International bunkers				
Aviation				
Navigation				
Multilateral operations				

Note: All footnotes for this table are given at the end of the table on sheet 6.

TABLE 10 EMISSION TRENDS
N₂O
(Sheet 4 of 6)

Year
Submission
Country

GREENHOUSE GAS SOURCE AND SINK CATEGORIES	Base year ⁽¹⁾	1990	(Years 1991 to latest reported year)	Change from base to latest reported year
				(kt)
				%
1. Energy				
1.A. Fuel combustion (sectoral approach)				
1.A.1. Energy industries				
1.A.2. Manufacturing industries and construction				
1.A.3. Transport				
1.A.4. Other sectors				
1.A.5. Other				
1.B. Fugitive emissions from fuels				
1.B.1. Solid fuels				
1.B.2. Oil and natural gas and other emissions from energy production				
1.C. CO ₂ Transport and storage				
2. Industrial processes and product use				
2.A. Mineral industry				
2.B. Chemical industry				
2.C. Metal industry				
2.D. Non-energy products from fuels and solvent use				
2.E. Electronic industry				
2.F. Product uses as substitutes for ODS				
2.G. Other product manufacture and use				
2.H. Other				
3. Agriculture				
3.A. Enteric fermentation				
3.B. Manure management				
3.C. Rice cultivation				
3.D. Agricultural soils				
3.E. Prescribed burning of savannahs				
3.F. Field burning of agricultural residues				
3.G. Liming				
3.H. Urea application				
3.I. Other carbon-containing fertilizers				
3.J. Other				
4. Land use, land-use change and forestry				
4.A. Forest land				
4.B. Cropland				
4.C. Grassland				
4.D. Wetlands				
4.E. Settlements				
4.F. Other land				
4.G. Harvested wood products				
4.H. Other				
5. Waste				
5.A. Solid waste disposal				
5.B. Biological treatment of solid waste				
5.C. Incineration and open burning of waste				
5.D. Wastewater treatment and discharge				
5.E. Other				
6. Other (please specify)				
Total direct N₂O emissions without N₂O from LULUCF				
Total direct N₂O emissions with N₂O from LULUCF excluding natural disturbances				
Total direct N₂O emissions with N₂O from LULUCF including natural disturbances				
Memo items:				
International bunkers				
Aviation				
Navigation				
Multilateral operations				

Note: All footnotes for this table are given at the end of the table on sheet 6.

TABLE 10 EMISSION TRENDS
HFCs, PFCs, SF₆, and NF₃
(Sheet 5 of 6)

Year
Submission
Country

GREENHOUSE GAS SOURCE AND SINK CATEGORIES	Base year ⁽¹⁾	1990	(Years 1991 to latest reported year)	Change from base to latest reported year
	(kt)			%
Emissions of HFCs and PFCs - (kt CO₂ equivalent)				
Emissions of HFCs - (kt CO₂ equivalent)				
HFC-23				
HFC-32				
HFC-41				
HFC-43-10mee				
HFC-125				
HFC-134				
HFC-134a				
HFC-143				
HFC-143a				
HFC-152				
HFC-152a				
HFC-161				
HFC-227ea				
HFC-236cb				
HFC-236ea				
HFC-236fa				
HFC-245ca				
HFC-245fa				
HFC-365mfc				
Unspecified mix of HFCs ⁽⁴⁾ - (kt CO ₂ equivalent)				
Emissions of PFCs - (kt CO₂ equivalent)				
CF ₄				
C ₂ F ₆				
C ₃ F ₈				
C ₄ F ₁₀				
c-C ₄ F ₈				
C ₅ F ₁₂				
C ₆ F ₁₄				
C ₁₀ F ₁₈				
c-C ₃ F ₆				
Unspecified mix of PFCs ⁽⁴⁾ - (kt CO ₂ equivalent)				
Unspecified mix of HFCs and PFCs - (kt CO₂ equivalent)				
Emissions of SF₆ - (kt CO₂ equivalent)				
SF ₆				
Emissions of NF₃ - (kt CO₂ equivalent)				
NF ₃				

Note: All footnotes for this table are given at the end of the table on sheet 6.

**TABLE 10 EMISSION TRENDS
SUMMARY
(Sheet 6 of 6)**

Year
Submission X
Country

GREENHOUSE GAS EMISSIONS	Base year ⁽¹⁾	1990	(Years 1991 to latest reported year)	Change from base to latest reported year
	CO ₂ equivalent (kt)			(%)
CO ₂ emissions without net CO ₂ from LULUCF				
CO ₂ emissions with net CO ₂ from LULUCF excluding natural disturbances				
CO ₂ emissions with net CO ₂ from LULUCF including natural disturbances				
CH ₄ emissions without CH ₄ from LULUCF				
CH ₄ emissions with CH ₄ from LULUCF excluding natural disturbances				
CH ₄ emissions with CH ₄ from LULUCF including natural disturbances				
N ₂ O emissions without N ₂ O from LULUCF				
N ₂ O emissions with N ₂ O from LULUCF excluding natural disturbances				
N ₂ O emissions with N ₂ O from LULUCF including natural disturbances				
HFCs				
PFCs				
Unspecified mix of HFCs and PFCs				
SF ₆				
NF ₃				
Total (without LULUCF)				
Total (with LULUCF) excluding natural disturbances				
Total (with LULUCF) including natural disturbances				
Total (without LULUCF, with indirect CO₂ emissions)				
Total (with LULUCF, with indirect CO₂ emissions) excluding natural disturbances				
Total (with LULUCF, with indirect CO₂ emissions) including natural disturbances				

GREENHOUSE GAS SOURCE AND SINK CATEGORIES	Base year ⁽¹⁾	1990	(Years 1991 to latest reported year)	Change from base to latest reported year
	CO ₂ equivalent (kt)			(%)
1. Energy				
2. Industrial processes and product use				
3. Agriculture				
4. Land use, land-use change and forestry excluding natural disturbances ⁽⁶⁾				
4. Land use, land-use change and forestry including natural disturbances ⁽⁶⁾				
5. Waste				
6. Other				
Total (including LULUCF)⁽⁵⁾				

⁽¹⁾ The column "Base year" should be filled in only by those Parties with economies in transition that use a base year different from 1990 in accordance with the relevant decisions of the COP. For these Parties, this different base year is used to calculate the percentage change in the final column of this table.

⁽²⁾ Fill in net emissions/removals as reported in table Summary I.A. For the purposes of reporting, the signs for removals are always negative (-) and for emissions positive (+).

⁽³⁾ In accordance with the UNFCCC Annex I inventory reporting guidelines, for Parties that decide to report indirect CO₂ the national totals shall be provided with and without indirect CO₂.

⁽⁴⁾ In accordance with the UNFCCC Annex I inventory reporting guidelines, HFC and PFC emissions should be reported for each relevant chemical. However, if it is not possible to report values for each chemical (i.e. mixtures, confidential data, lack of disaggregation), this row could be used for reporting aggregate figures for HFCs and PFCs, respectively. Note that the unit used for this row is kt of CO₂ equivalent and that appropriate notation keys should be entered in the cells for the individual chemicals.

⁽⁵⁾ Includes net CO₂, CH₄ and N₂O from LULUCF.

Documentation box:

- Parties should provide detailed explanations on emissions trends in chapter 2: Trends in Greenhouse Gas Emissions and, as appropriate, in the corresponding Chapters 3 - 8 of the national inventory report (NIR). Use this documentation box to provide references to relevant sections of the NIR if any additional information and further details are needed to understand the content of this table.
- Use the documentation box to provide explanations if potential emissions are reported.

Example of sectoral background data tables

TABLE 5.A SECTORAL BACKGROUND DATA FOR WASTE

Solid waste disposal

(Sheet 1 of 1)

Year

Submission

Country

GREENHOUSE GAS SOURCE AND SINK CATEGORIES	ACTIVITY DATA AND OTHER RELATED INFORMATION			IMPLIED EMISSION FACTOR		EMISSIONS			
	Annual waste at the SWDS (kt)	MCF	DOC _f %	CH ₄ ⁽¹⁾ (t/t waste)	CO ₂ (t/t waste)	CH ₄			CO ₂ ⁽⁴⁾ (kt)
						Emissions ⁽²⁾	Amount of CH ₄ flared	Amount of CH ₄ for energy recovery ⁽³⁾	
						(kt)			
1. Managed waste disposal sites									
a. Anaerobic									
b. Semi-aerobic									
2. Unmanaged waste disposal sites									
3. Uncategorized waste disposal sites									

Note: SWDS = solid waste disposal site, MCF = methane correction factor, DOC_f = fraction of degradable organic carbon that decomposes, DOC = degradable organic carbon (IPCC Guidelines (Volume 5, section 3.2.3)).

Note: Annual waste includes household waste, yard/garden waste, commercial/institutional waste, sludge, industrial and other waste.

Note: There is no methodology in the 2006 IPCC Guidelines to estimate emissions from flaring based on recovered biogas from solid waste disposal sites and wastewater handling. If data are available, Parties are encouraged to report

⁽¹⁾ The CH₄ implied emission factor (IEF) is calculated on the basis of gross CH₄ emissions as follows: $IEF = (CH_4 \text{ emissions} + CH_4 \text{ recovered}) / \text{annual waste at the SWDS}$.

⁽²⁾ Actual emissions (after flaring and recovery).

⁽³⁾ When recovered CH₄ emissions are used for energy, the emissions from the combustion should be reported under category 1.A and are provided here for information only.

⁽⁴⁾ Under solid waste disposal, CO₂ emissions should be reported only when the disposed waste is combusted at the disposal site as a management practice. CO₂ emissions from non-biogenic waste are included in the total emissions.

Documentation box:

- Parties should provide detailed explanations on the waste sector in chapter 7: waste (CRF sector 5) of the national inventory report (NIR). Use this documentation box to provide references to relevant sections of the NIR if any additional information and/or further details are needed to understand the content of this table.
- Parties that use country-specific models should provide a reference in the documentation box to the relevant section in the NIR where these models are described, and fill in only the relevant cells of table 5.A.
- Provide a reference to the relevant section in the NIR, in particular with regard to:
 - (a) The population size (total or urban population) used in the calculations and the rationale for doing so;
 - (b) The composition of landfilled waste.
- Parties should specify the category in the energy sector under which the emissions from energy recovery are reported.

Annex III: Examples illustrating some of the options for implementing the flexibility provisions⁷

Example 1: the use of colour, note, additional column and documentation box to indicate the absence of reporting.

SUMMARY 2 - SUMMARY REPORT FOR CO₂ EQUIVALENT EMISSIONS
(Sheet 1 of 1)

GREENHOUSE GAS SOURCE AND SINK CATEGORIES	CO ₂ ⁽¹⁾	CH ₄	N ₂ O	HFCs	PFCs	SF ₆	Unspecified mix of HFCs and PFCs	NF ₃	Total	Description of capacity constraints for using flexibility provision
CO ₂ equivalent (kt)										
Total (net emissions)⁽¹⁾	54,537.81	8,428.10	5,778.27			94.26			69,984.83	
1. Energy	54,123.79	1,555.54	274.39						55,953.72	
A. Fuel combustion (sectoral approach)	54,010.71	515.39	274.01						54,800.11	
1. Energy industries	19,792.73	23.84	71.11						19,887.67	
2. Manufacturing industries and construction	4,599.75	6.62	14.72						4,621.09	
3. Transport	11,839.57	54.38	116.24						12,010.19	
4. Other sectors	17,764.41	430.55	71.82						18,266.78	
5. Other	14.26	0.00	0.12						14.38	
B. Fugitive emissions from fuels	113.08	1,040.15	0.38						1,153.61	
1. Solid fuels	NO,NA,IE	94.48	NO,NA,IE						94.48	
2. Oil and natural gas	113.08	945.67	0.38						1,059.12	
C. CO ₂ transport and storage	NO								NO	
2. Industrial processes and product use	6,125.90	50.08	1,989.80			94.26			9,406.42	Lack of data
A. Mineral industry	2,072.39								2,072.39	
B. Chemical industry	2,294.96	44.79	1,666.71			NO			4,006.46	Lack of data
C. Metal industry	1,595.66	5.29	NO			NO			1,878.42	Lack of data
D. Non-energy products from fuels and solvent use	162.90	NA,NO	NA,NO						162.90	
E. Electronic Industry						1.19			1.19	Lack of data
F. Product uses as ODS substitutes						NO			868.91	Lack of data
G. Other product manufacture and use	NO	NO	323.09			93.08			416.16	Lack of data
H. Other	NO	NO	NO			NO			NO	Lack of data
3. Agriculture	142.26	2,623.90	3,305.66						6,071.82	
A. Enteric fermentation		1,916.62							1,916.62	
B. Manure management		689.29	490.92						1,180.21	
C. Rice cultivation		17.99							17.99	
D. Agricultural soils		NA	2,814.75						2,814.75	
E. Prescribed burning of savannas		NO	NO						NO	
F. Field burning of agricultural residues		NO	NO						NO	
G. Liming	33.15								33.15	
H. Urea application	87.44								87.44	
I. Other carbon-containing fertilizers	21.67								21.67	
J. Other	NO	NO	NO						NO	
4. Land use, land-use change and forestry⁽¹⁾	-5,949.88	23.91	68.83						-5,857.14	
A. Forest land	-5,593.32	16.67	19.96						-5,556.69	
B. Cropland	-554.19	1.14	31.23						-521.82	
C. Grassland	-301.43	6.10	7.24						-288.10	
D. Wetlands	374.74	NO	1.25						375.99	
E. Settlements	196.74	NA,NO	9.15						205.89	
F. Other land	0.08	NA,NO	0.01						0.09	
G. Harvested wood products	-72.50								-72.50	
H. Other	NA	NA	NA						NA	
5. Waste	95.75	4,174.67	139.59						4,410.01	
A. Solid waste disposal	NO,NA	3,609.95							3,609.95	
B. Biological treatment of solid waste		19.92	12.34						32.26	
C. Incineration and open burning of waste	95.75	0.19	0.88						96.82	
D. Waste water treatment and discharge		544.61	126.38						670.98	
E. Other	NO	NO	NO						NO	
6. Other (as specified in summary 1.A)	NO	NO	NO			NO			NO	
Memo items:⁽²⁾										
International bunkers	810.09	0.14	6.75						816.98	
Aviation	810.09	0.14	6.75						816.98	
Navigation	NE,NO	NE,NO	NE,NO						NE,NO	
Multilateral operations	NO	NO	NO						NO	
CO₂ emissions from biomass	7,385.57								7,385.57	
CO₂ captured	NO								NO	
Long-term storage of C in waste disposal sites	9,887.02								9,887.02	
Indirect N₂O			NE,NO							
Indirect CO₂⁽³⁾	NE,NO									
Total CO₂ equivalent emissions without land use, land-use change and forestry									75,841.97	
Total CO₂ equivalent emissions with land use, land-use change and forestry									69,984.83	
Total CO₂ equivalent emissions, including indirect CO₂, without land use, land-use change and forestry									NA	
Total CO₂ equivalent emissions, including indirect CO₂, with land use, land-use change and forestry									NA	

Note: HFCs, PFCs, unspecified mixture of HFCs and PFCs and NF₃ are applied flexibility according to paragraph 48 of annex to Decision 18/CMA.1 and are not shown in this table.

⁽¹⁾ For carbon dioxide (CO₂) from land use, land-use change and forestry the net emissions/removals are to be reported. For the purposes of reporting, the signs for removals are always negative (-) and for emissions positive (+).

⁽²⁾ See footnote 7 to table Summary 1.A.

⁽³⁾ In accordance with the UNFCCC Annex I inventory reporting guidelines, for Parties that decide to report indirect CO₂, the national totals shall be provided with and

Documentation box:

HFCs, PFCs, unspecified mixture of HFCs and PFCs and NF₃ are applied flexibility according to paragraph 48 of annex to Decision 18/CMA.1 and are not shown in this table.

⁷ Examples included in this annex are based on the following assumptions: A developing Party's submission in 2025; reporting years according to MPG are 1990–2023; reported years are 2000, 2010, and 2020–2022; The Party reports CO₂, CH₄, N₂O and SF₆ and does not report HFCs PFCs, unspecified mix of HFCs and PFCs, and NF₃.

Example 2: the use of colour to indicate the absence of reporting for specific cells, and the use of note and documentation box.

TABLE 10 EMISSION TRENDS SUMMARY (Sheet 6 of 6)

GREENHOUSE GAS EMISSIONS	Base year ⁽¹⁾	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	Change from base to latest reported year
	CO ₂ equivalent (kt)																												(%)							
CO ₂ emissions without net CO ₂ from LULUCF												58,544.69										60,164.69								60,164.69	59,155.85	61,930.72		-29.31		
CO ₂ emissions with net CO ₂ from LULUCF												57,686.85											57,688.86								57,688.86	57,253.12	57,484.03		-34.85	
CH ₄ emissions without CH ₄ from LULUCF												8,923.16											8,900.48								8,900.48	8,843.04	9,074.78		-33.00	
CH ₄ emissions with CH ₄ from LULUCF												8,949.01											8,919.34								8,919.34	8,863.21	9,093.16		-32.94	
N ₂ O emissions without N ₂ O from LULUCF												5,367.24											5,841.04								5,841.04	5,106.45	5,102.61		-48.19	
N ₂ O emissions with N ₂ O from LULUCF												5,432.00											5,902.62								5,902.62	5,170.03	5,166.72		-47.67	
HFCs																																				
PFCs																																				
Unspecified mix of HFCs and PFCs																																				
SF ₆												84.04											82.96								82.96	66.71	78.40		1,433.60	
NF ₃																																				
Total (without LULUCF)												73,427.06											75,568.66								75,568.66	73,899.52	77,037.15		-30.74	
Total (with LULUCF)												72,659.83											73,173.26								73,173.26	72,080.55	72,672.96		-35.02	
Total (without LULUCF, with indirect)												NA											NA								NA	NA	NA		0.00	
Total (with LULUCF, with indirect)												NA											NA								NA	NA	NA		0.00	

GREENHOUSE GAS SOURCE AND SINK CATEGORIES	Base year ⁽¹⁾	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	Change from base to latest reported year
	CO ₂ equivalent (kt)																												(%)							
1. Energy												54,663.46										55,380.27								56,583.04	55,380.27	58,360.47		-29.16		
2. Industrial processes and product use												8,293.37											7,703.65								8,297.83	7,703.65	7,959.89		-38.15	
3. Agriculture												6,100.63											6,317.11								6,283.97	6,317.11	6,143.84		-49.12	
4. Land use, land-use change and forestry ⁽⁵⁾												-767.22											-1,818.97								-2,395.40	-1,818.97	-4,364.20		223.97	
5. Waste												4,369.59											4,498.49								4,403.83	4,498.49	4,572.95		30.62	
6. Other												NO											NO								NO	NO	NO		0.00	
Total (including LULUCF)⁽⁵⁾												72,659.83											72,080.55								73,173.26	72,080.55	72,672.96		-35.02	

Note: Cells in pink with diagonal line are applied flexibility according to paragraph 48, 57 or 58 of annex to Decision 18/CMA.1.

(1) The column "Base year" should be filled in only by those Parties with economies in transition that use a base year different from 1990 in accordance with the relevant decisions of the COP. For these Parties, this different base year is used to calculate the percentage change in the final column of this table.

(2) Fill in net emissions/removals as reported in table Summary 1.A. For the purposes of reporting, the signs for removals are always negative (-) and for emissions positive (+).

(3) In accordance with the UNFCCC reporting guidelines, for Parties that decide to report indirect CO₂, the national totals shall be provided with and without indirect CO₂.

(4) In accordance with the UNFCCC reporting guidelines, HFC and PFC emissions should be reported for each relevant chemical. However, if it is not possible to report values for each chemical (i.e. mixtures, confidential data, lack of disaggregation), this row could be used for reporting aggregate figures for HFCs and PFCs, respectively. Note that the unit used for this row is kt of CO₂ equivalent and that appropriate notation keys should be entered in the cells for the individual chemicals.

(5) Includes net CO₂, CH₄ and N₂O from LULUCF.

Documentation box:
<ul style="list-style-type: none"> Parties should provide detailed explanations on emissions trends in chapter 2: Trends in Greenhouse Gas Emissions and, as appropriate, in the corresponding Chapters 3 - 8 of the national inventory report (NIR). Use this documentation box to provide references to relevant sections of the NIR if any additional information and further details are needed to understand the content of this table. Use the documentation box to provide explanations if potential emissions are reported.
Cells in pink with diagonal line are applied flexibility according to paragraph 48, 57 or 58 of annex to Decision 18/CMA.1.

SUMMARY 2 SUMMARY REPORT FOR CO₂ EQUIVALENT EMISSIONS
(Sheet 1 of 1)

GREENHOUSE GAS SOURCE AND SINK CATEGORIES	CO ₂ ⁽¹⁾	CH ₄	N ₂ O	SF ₆	Total
Total (net emissions)⁽¹⁾	54,537.81	8,428.10	5,778.27	94.26	69,984.83
1. Energy	54,123.79	1,555.54	2,724.39		55,953.72
A. Fuel combustion (sectoral approach)	54,010.71	515.39	2,740.1		54,800.11
1. Energy industries	19,792.73	23.84	71.11		19,887.67
2. Manufacturing industries and construction	4,599.75	6.62	14.72		4,621.09
3. Transport	11,839.57	54.38	116.24		12,010.19
4. Other sectors	17,764.41	430.55	71.82		18,266.78
5. Other	14.26	0.00	0.12		14.38
B. Fugitive emissions from fuels	113.08	1,040.15	0.38		1,153.61
1. Solid fuels	NO,NA,IE	94.48	NO,NA,IE		94.48
2. Oil and natural gas	113.08	945.67	0.38		1,059.12
C. CO ₂ transport and storage	NO	NO	NO		NO
2. Industrial processes and product use	6,125.90	50.08	1,989.80	94.26	9,406.42
A. Mineral industry	2,072.39				2,072.39
B. Chemical industry	2,294.96	44.79	1,666.71	NO	4,006.46
C. Metal industry	1,595.66	5.29	NO	NO	1,878.42
D. Non-energy products from fuels and solvent use	162.90	NA,NO	NA,NO	NO	162.90
E. Electronic industry				1.19	1.19
F. Product uses as ODS substitutes				NO	868.91
G. Other product manufacture and use	NO	NO	323.09	93.08	416.16
H. Other	NO	NO	NO	NO	NO
3. Agriculture	142.26	2,623.90	3,305.66		6,071.82
A. Enteric fermentation		1,916.62	490.92		1,916.62
B. Manure management		689.29	17.99		1,180.21
C. Rice cultivation		17.99	NA		17.99
D. Agricultural soils			2,814.75		2,814.75
E. Prescribed burning of savannas		NO	NO	NO	NO
F. Field burning of agricultural residues		NO	NO	NO	NO
G. Liming		33.15			33.15
H. Urea application		87.44			87.44
I. Other carbon-containing fertilizers		21.67			21.67
J. Other		NO	NO	NO	NO
4. Land use, land-use change and forestry⁽¹⁾	-5,949.88	23.91	68.83		-5,857.14
A. Forest land	-5,595.32	16.67	19.96		-5,556.69
B. Cropland	-554.19	1.14	31.23		-521.82
C. Grassland	-301.43	6.10	-288.10		-375.99
D. Wetlands	314.74	NO	1.25		375.99
E. Settlements	196.74	NA,NO	9.15		205.89
F. Other land	0.08	NA,NO	0.01		0.09
G. Harvested wood products	-72.50				-72.50
H. Other	NA	NA	NA		NA
5. Waste	95.75	4,174.67	139.59		4,410.01
A. Solid waste disposal	NO,NA	3,609.95			3,609.95
B. Biological treatment of solid waste		19.92	12.34		32.26
C. Incineration and open burning of waste	95.75	0.19	0.88		96.82
D. Waste water treatment and discharge		544.61	126.58		670.98
E. Other	NO	NO	NO		NO
6. Other (as specified in summary 1.A)	NO	NO	NO	NO	NO
Memo items:⁽²⁾					
International bunkers	810.09	0.14	6.75		816.98
Aviation	810.09	0.14	6.75		816.98
Navigation	NE,NO	NE,NO	NE,NO		NE,NO
Multilateral operations	NO	NO	NO		NO
CO ₂ emissions from biomass	7,385.57				7,385.57
CO ₂ captured	NO				NO
Long-term storage of C in waste disposal sites	9,887.02				9,887.02
Indirect N ₂ O			NE,NO		
Indirect CO ₂ ⁽³⁾	NE,NO				
Total CO₂ equivalent emissions without land use, land-use change and forestry					75,841.97
Total CO₂ equivalent emissions with land use, land-use change and forestry					69,984.83
Total CO₂ equivalent emissions, including indirect CO₂, without land use, land-use change and forestry					NA
Total CO₂ equivalent emissions, including indirect CO₂, with land use, land-use change and forestry					NA

Note: HFCs, PFCs, unspecified mixture of HFCs and PFCs and NF₃ are applied flexibility according to paragraph 48 of annex to Decision 18/CMA.1 and are not shown in this table.

- (1) For carbon dioxide (CO₂) from land use, land-use change and forestry the net emissions/removals are to be reported. For the purposes of reporting, the signs for removals are always negative (-) and for emissions positive (+).
- (2) See footnote 7 to table Summary 1.A.
- (3) In accordance with the UNFCCC Annex I inventory/reporting guidelines, for Parties that decide to report indirect CO₂, the national

Documentation box: HFC, PFC, unspecified mixture of HFC and PFC and NF₃ are applied flexibility according to paragraph 48 of annex to Decision 18/CMA.1 and are not shown in this table.

Example 3: the deletion or hiding of columns, and the use of note and documentation box.

Example 4: the deletion of column, and the use of note, documentation box and drop-down menu.

TABLE 10 EMISSION TRENDS
GHG CO₂ eq emissions (Sheet 1 of 6)

GREENHOUSE GAS SOURCE AND SINK CATEGORIES	2000	2010	2015	CO ₂ eq				Change from base to latest reported year %
				Flex	2020	2021	2022	
Total (net emissions) ²⁾	107,697.50	91,224.29		69,788.39	72,659.83	73,173.26	-35.02	
1. Energy	78,986.78	68,191.29	Flexibility for 2015 applied para. 57	57,065.65	54,665.46	56,585.04	-29.16	
A. Fuel combustion (sectoral approach)	75,716.41	65,551.55		55,535.92	53,159.12	55,129.26	-27.62	
1. Energy industries	25,720.74	20,689.29		22,474.85	23,656.05	23,965.22	-22.68	
2. Manufacturing industries and construction	16,462.16	13,622.83		8,297.62	4,651.73	4,994.18	-71.93	
3. Transport	8,564.33	8,878.17		7,465.71	9,085.63	9,571.76	-40.23	
4. Other sectors	24,954.80	22,348.88		17,101.36	15,753.33	16,585.82	-26.80	
5. Other	14.38	14.38		14.38	14.38	14.38	0.00	
B. Fugitive emissions from fuels	3,270.37	2,645.74		1,711.73	1,504.34	1,453.67	-64.73	
1. Solid fuels	1,275.20	895.68		482.78	432.27	425.33	-92.61	
2. Oil and natural gas and other emissions from energy production	1,992.17	1,750.06		1,228.95	1,072.08	1,028.34	-46.84	
C. CO ₂ transport and storage	NO	NO		NO	NO	NO	0.00	
2. Industrial Processes	15,209.45	11,831.84		8,346.42	8,298.37	8,297.83	-38.15	
A. Mineral industry	2,899.58	2,895.43		2,006.71	1,996.12	1,999.89	-28.52	
B. Chemical industry	6,746.44	4,865.64		2,836.03	3,596.54	3,638.75	-40.61	
C. Metal industry	5,124.12	3,698.80		2,888.44	2,004.96	1,888.26	-63.34	
D. Non-energy products from fuels and solvent use	246.89	206.26		332.34	257.51	192.30	-34.02	
E. Electronic industries	NO	NO		NO	NO	1.19	100.00	
F. Product uses as ODS substitutes	NO	NO		51.49	226.61	314.52	100.00	
G. Other product manufacture and use	192.62	164.71		231.40	225.64	262.93	116.06	
H. Other	11,933.09	9,975.64		5,942.58	6,100.63	6,283.97	-49.12	
3. Agriculture	4,219.87	3,753.50		2,214.37	2,131.98	2,047.46	-54.58	
A. Enteric fermentation	2,215.23	2,064.19		1,280.12	1,316.13	1,280.83	-46.80	
B. Manure management	81.23	81.00		27.00	21.75	15.79	-77.85	
C. Rice cultivation	4,946.82	3,692.20		2,324.32	2,526.57	2,831.72	-43.10	
D. Agricultural soils	NO	NO		NO	NO	NO	0.00	
E. Prescribed burning of savannas	59.59	NO		NO	NO	NO	0.00	
F. Field burning of agricultural residues	130.21	190.86		58.42	24.44	23.16	-74.54	
G. Liming	222.03	171.15		50.82	64.64	68.90	-61.82	
H. Urea application	48.11	22.73		7.52	15.12	16.12	-54.96	
I. Other carbon-containing fertilizers	NO	NO		NO	NO	NO	0.00	
J. Other	-1,807.92	-2,671.60		-5,699.43	-761.22	-2,395.40	123.37	
4. Land use, land-use change and forestry ²⁾	-2,466.06	-3,403.29		-6,217.29	-6,217.29	-2,446.15	225.53	
A. Forest land	179.02	173.00		-170.82	-391.48	-560.12	-391.50	
B. Cropland	5.57	33.33		-34.83	-216.59	-237.21	-5276.77	
C. Grassland	873.88	799.95		421.28	421.95	455.09	-569.97	
D. Wetlands	63.13	113.43		113.67	191.73	182.43	226.13	
E. Settlements	NA/NO	NA/NO		0.03	0.09	0.09	100.00	
F. Other land	-463.45	-387.72		88.54	15.21	10.47	-84.36	
G. Harvested wood products	NA	NA		NA	NA	NA	0.00	
H. Other	3,376.11	3,891.12		4,133.18	4,360.59	4,403.83	30.62	
5. Waste	2,210.27	2,674.71		3,018.28	3,529.00	3,419.17	63.33	
A. Solid waste disposal	8.58	8.58		12.01	15.94	14.60	276.16	
B. Biological treatment of solid waste	122.30	122.30		122.30	122.30	122.30	-20.84	
C. Incineration and open burning of waste	1,034.96	1,088.53		980.58	872.36	844.75	-35.17	
D. Waste water treatment and discharge	NO	NO		NO	NO	NO	0.00	
E. Other	NO	NO		NO	NO	NO	0.00	
6. Other (as specified in summary 1.4)	NO	NO		NO	NO	NO	0.00	
Memo Items:								
International bunkers	452.93	500.91		554.11	713.40	669.65	80.38	
Aviation	452.93	500.91		554.11	713.40	669.65	80.38	
Navigation	NE/NO	NE/NO		NE/NO	NE/NO	NE/NO	0.00	
Multilateral operations	NO	NO		NO	NO	NO	0.00	
CO ₂ emissions from biomass	2,534.13	3,132.51		3,627.77	6,040.50	6,768.72	191.44	
CO ₂ captured	NO	NO		NO	NO	NO	0.00	
Long-term storage of C in waste disposal sites	4,804.64	5,918.74		7,081.94	8,404.82	8,719.48	105.78	
Indirect N ₂ O	NE/NO	NE/NO		NE/NO	NE/NO	NE/NO	0.00	
Indirect CO ₂ ³⁾	109,505.42	93,895.89		75,487.82	73,427.06	75,568.66	-30.74	
Total CO ₂ equivalent emissions with LULUCF	107,697.50	91,224.29		69,788.39	72,659.83	73,173.26	-35.02	
Total CO ₂ equivalent emissions, including indirect CO ₂ without LULUCF	NA	NA		NA	NA	NA	0.00	
Total CO ₂ equivalent emissions, including indirect CO ₂ with LULUCF	NA	NA		NA	NA	NA	0.00	

Note: All footnotes for this table are given at the end of the table on sheet 6

Note2: HFCs, PFCs, unspecified mixture of HFCs and PFCs and NF₃ are applied flexibility according to paragraph 48 of annex to Decision 18/CMA.1 and are not shown in this table.

Note3: Years 1990–1999, 2001–2009, 2011–2019 are applied flexibility according to paragraph 57 of annex to Decision 18/CMA.1 and are not shown in this table.

Note4: the Year 2023 is applied flexibility according to paragraph 58 of annex to Decision 18/CMA.1 and are not shown in this table.

Documentation box:

HFCs, PFCs, unspecified mixture of HFCs and PFCs and NF₃ are applied flexibility according to paragraph 48 of annex to Decision 18/CMA.1 and are not shown in this table.
Years 1990–1999, 2001–2009, 2011–2019 are applied flexibility according to paragraph 57 of annex to Decision 18/CMA.1 and are not shown in this table.
the Year 2023 is applied flexibility according to paragraph 58 of annex to Decision 18/CMA.1 and are not shown in this table.

Example 5: the deletion or hiding of columns and rows, and the use of note and documentation box.

GREENHOUSE GAS EMISSIONS	2000	2010	2020	2021	2022	Change from base to latest reported year (%)
	CO ₂ equivalent (kt)					
CO ₂ emissions without net CO ₂ from LULUCF	85,564.64	73,447.85	61,607.78	58,544.69	60,164.69	-29.31
CO ₂ emissions with net CO ₂ from LULUCF	83,710.57	70,714.17	55,837.71	57,686.85	57,688.86	-34.85
CH ₄ emissions without CH ₄ from LULUCF	12,543.60	11,746.22	8,812.05	8,923.16	8,900.48	-33.00
CH ₄ emissions with CH ₄ from LULUCF	12,568.48	11,769.07	8,831.40	8,949.01	8,919.34	-32.94
N ₂ O emissions without N ₂ O from LULUCF	11,019.95	8,315.21	4,741.74	5,367.24	5,841.04	-48.19
N ₂ O emissions with N ₂ O from LULUCF	11,041.28	8,334.44	4,793.04	5,432.00	5,902.62	-47.67
SF ₆	6.15	10.89	52.04	84.04	82.96	1,433.60
Total (without LULUCF)	109,505.42	93,895.89	75,487.82	73,427.06	75,568.66	-30.74
Total (with LULUCF)	107,697.50	91,224.29	69,788.39	72,659.83	73,173.26	-35.02
Total (without LULUCF, with indirect)	NA	NA	NA	NA	NA	0.00
Total (with LULUCF, with indirect)	NA	NA	NA	NA	NA	0.00

TABLE 10 EMISSION TRENDS SUMMARY

(Sheet 6 of 6)

GREENHOUSE GAS SOURCE AND SINK CATEGORIES	2000	2010	2020	2021	2022	Change from base to latest reported year (%)
	CO ₂ equivalent (kt)					
1. Energy	78,986.78	68,197.29	57,065.65	54,663.46	56,583.04	-29.16
2. Industrial processes and product use	15,209.45	11,831.84	8,346.42	8,293.37	8,297.83	-38.15
3. Agriculture	11,933.09	9,975.64	5,942.38	6,100.63	6,283.97	-49.12
4. Land use, land-use change and forestry ⁽⁵⁾	-1,807.92	-2,671.60	-5,699.43	-767.22	-2,395.40	223.97
5. Waste	3,376.11	3,891.12	4,133.18	4,369.59	4,403.83	30.62
6. Other	NO	NO	NO	NO	NO	0.00
Total (including LULUCF) ⁽⁵⁾	107,697.50	91,224.29	69,788.39	72,659.83	73,173.26	-35.02

Note: HFCs, PFCs, unspecified mixture of HFCs and PFCs and NF₃ are applied flexibility according to paragraph 48 of annex to Decision 18/CMA.1 and are not shown in this table.

Note²: Years 1990–1999, 2001–2009, 2011–2019 are applied flexibility according to paragraph 57 of annex to Decision 18/CMA.1 and are not shown in this table.

Note³: the Year 2023 is applied flexibility according to paragraph 58 of annex to Decision 18/CMA.1 and are not shown in this table.

- (1) The column "Base Year" should be filled in only by those Parties with economies in transition that use a base year different from 1990 in accordance with the relevant decisions of the COP. For these Parties, this different base year is used to calculate the percentage change in the final column of this table.
- (2) Fill in net emissions/removals as reported in table Summary 1.A. For the purposes of reporting, the signs for removals are always negative (-) and for emissions positive (+).
- (3) In accordance with the UNFCCC reporting guidelines, for Parties that decide to report indirect CO₂ the national totals shall be provided with and without indirect CO₂.
- (4) In accordance with the UNFCCC reporting guidelines, HFC and PFC emissions should be reported for each relevant chemical. However, if it is not possible to report values for each chemical (i.e. mixtures, confidential data, lack of disaggregation), this row could be used for reporting aggregate figures for HFCs and PFCs, respectively. Note that the unit used for this row is kt of CO₂ equivalent and that appropriate notation keys should be entered in the cells for the individual chemicals.

Documentation box:

- Parties should provide detailed explanations on emissions trends in chapter 2: Trends in Greenhouse Gas Emissions and as appropriate, in the corresponding Chapters 3 - 8 of the national inventory/report (NIR). Use this documentation box to provide references to relevant sections of the NIR if any additional information and further details are needed to understand the content of this table.
- Use the documentation box to provide explanations if potential emissions are reported.

Documentation box

HFCs, PFCs, unspecified mixture of HFCs and PFCs and NF₃ are applied flexibility according to paragraph 48 of annex to Decision 18/CMA.1 and are not shown in this table.
 Years 1990–1999, 2001–2009, 2011–2019 are applied flexibility according to paragraph 57 of annex to Decision 18/CMA.1 and are not shown in this table.
 the Year 2023 is applied flexibility according to paragraph 58 of annex to Decision 18/CMA.1 and are not shown in this table.

Example 6: the use of notation keys (FL, NE*), notes, documentation box, and explanation in a cell.

SUMMARY 2. SUMMARY REPORT FOR CO₂ EQUIVALENT EMISSIONS
(Sheet 1 of 1)

GREENHOUSE GAS SOURCE AND SINK CATEGORIES	CO ₂ ^(b)	CH ₄	N ₂ O	HFCs	PFCs	SF ₆	Unspecified mix of HFCs and PFCs	NF ₃	Total
Total (net emissions)^(b)	54 537.81	8 428.10	5 778.27	FL	FL	94.26	FL	FL	69 984.83
1. Energy	54 123.79	1 555.54	274.39	FL	FL	FL	FL	FL	55 953.72
A. Fuel combustion (sectoral approach)	54 010.71	315.39	274.01	FL	FL	FL	FL	FL	54 800.11
1. Energy industries	19 792.73	23.84	71.11	FL	FL	FL	FL	FL	19 887.67
2. Manufacturing industries and construction	4 599.75	6.62	14.72	FL	FL	FL	FL	FL	4 621.09
3. Transport	11 839.57	54.38	116.24	FL	FL	FL	FL	FL	12 010.19
4. Other sectors	17 764.41	450.55	71.82	FL	FL	FL	FL	FL	18 266.78
5. Other	14.26	0.00	0.12	FL	FL	FL	FL	FL	14.38
B. Fugitive emissions from fuels	113.08	1 040.15	0.38	NO,NA,IE	NO,VA,IE	NO,VA,IE	NO,VA,IE	NO,VA,IE	1 153.61
1. Solid fuels	NO,NA,IE	94.48	NO,VA,IE	NO,VA,IE	NO,VA,IE	NO,VA,IE	NO,VA,IE	NO,VA,IE	94.48
2. Oil and natural gas	113.08	945.67	NE-F	FL	FL	FL	FL	FL	1 059.12
C. CO ₂ transport and storage	NO	NO	NO	FL	FL	FL	FL	FL	NO
2. Industrial processes and product use	6 125.80	50.08	1 989.80	FL	FL	94.26	FL	FL	9 486.42
A. Mineral industry	2 073.30	44.30	1 666.71	FL	FL	NO	FL	FL	2 972.30
B. Chemical industry	2 292.60	4.20	NO	FL	FL	NO	FL	FL	4 086.46
C. Metal industry	1 592.88	NO	NO	FL	FL	NO	FL	FL	1 878.24
D. Non-energy products from fuels and solvent use	16.90	NA,NO	NA,NO	FL	FL	FL	FL	FL	162.90
E. Electronic industry	NO	NO	NO	FL	FL	1.19	FL	FL	1.19
F. Product uses as ODS substitutes	NO	NO	323.09	FL	FL	Flexibility according to paragraph 48 applied	FL	FL	868.97
G. Other product manufacture and use	NO	NO	NO	FL	FL	NO	FL	FL	416.16
H. Other	142.26	2 623.90	3 305.66	FL	FL	NO	FL	FL	6 071.82
3. Agriculture	1 916.62	689.29	490.92	FL	FL	FL	FL	FL	1 916.62
A. Enteric fermentation	1 916.62	689.29	490.92	FL	FL	FL	FL	FL	1 916.62
B. Manure management	NO	NO	NO	FL	FL	FL	FL	FL	1 180.21
C. Rice cultivation	NO	NO	NO	FL	FL	FL	FL	FL	17.99
D. Agricultural soils	NO	NO	2 814.75	FL	FL	FL	FL	FL	2 814.75
E. Prescribed burning of biomass	NO	NO	NO	FL	FL	FL	FL	FL	NO
F. Field burning of agricultural residues	NO	NO	NO	FL	FL	FL	FL	FL	NO
G. Land use change and forestry	33.15	87.44	NO	FL	FL	FL	FL	FL	33.15
H. Land use change and forestry	87.44	NO	NO	FL	FL	FL	FL	FL	87.44
I. Other carbon-containing fertilizers	21.67	NO	NO	FL	FL	FL	FL	FL	21.67
J. Other	NO	NO	NO	FL	FL	FL	FL	FL	NO
4. Land use, land-use change and forestry^(b)	-5 949.88	23.91	68.83	FL	FL	FL	FL	FL	-5 887.14
A. Forest land	-5 595.32	16.67	19.96	FL	FL	FL	FL	FL	-5 556.69
B. Cropland	-354.19	1.14	31.23	FL	FL	FL	FL	FL	-321.82
C. Grassland	-301.43	6.10	7.24	FL	FL	FL	FL	FL	-288.10
D. Wetlands	374.74	NO	1.23	FL	FL	FL	FL	FL	375.99
E. Settlements	196.74	NA,NO	9.15	FL	FL	FL	FL	FL	205.89
F. Other land	0.08	NA,NO	0.01	FL	FL	FL	FL	FL	0.09
G. Harvested wood products	-72.50	NO	NO	FL	FL	FL	FL	FL	-72.50
H. Other	NA	NA	NA	FL	FL	FL	FL	FL	NA
I. Other	95.75	4 174.67	139.59	FL	FL	FL	FL	FL	4 410.01
K. Waste	NO,NA	3 609.95	NO	FL	FL	FL	FL	FL	3 609.95
A. Solid waste disposal	NO,NA	3 609.95	NO	FL	FL	FL	FL	FL	3 609.95
B. Biological treatment of solid waste	19.92	12.34	NO	FL	FL	FL	FL	FL	32.26
C. Incineration and open burning of waste	0.19	0.88	NO	FL	FL	FL	FL	FL	96.82
D. Waste water treatment and discharge	95.75	344.61	126.38	FL	FL	FL	FL	FL	670.98
E. Other	NO	NO	NO	FL	FL	FL	FL	FL	NO
F. Other	NO	NO	NO	FL	FL	FL	FL	FL	NO
6. Other (as specified in summary 1.4)	NO	NO	NO	FL	FL	FL	FL	FL	NO
Mono items:^(c)									
International bunkers	810.09	0.14	6.75	FL	FL	FL	FL	FL	816.98
Aviation	810.09	0.14	6.75	FL	FL	FL	FL	FL	816.98
Navigation	NE,NO	NE,NO	NE,NO	FL	FL	FL	FL	FL	NE,NO
Maritime operations	NO	NO	NO	FL	FL	FL	FL	FL	NO
CO ₂ emissions from biomass	7 385.57	NO	NO	FL	FL	FL	FL	FL	7 385.57
CO ₂ captured	NO	NO	NO	FL	FL	FL	FL	FL	NO
Long-term storage of C in waste disposal sites	9 887.02	NO	NO	FL	FL	FL	FL	FL	9 887.02
Indirect CO ₂ ^(b)	NE,NO	NE,NO	NE,NO	FL	FL	FL	FL	FL	NE,NO
Total CO₂ equivalent emissions without land use, land-use change and forestry									75 841.97
Total CO₂ equivalent emissions with land use, land-use change and forestry									69 984.83
Total CO₂ equivalent emissions, including indirect CO₂, without land use, land-use change and forestry									NA
Total CO₂ equivalent emissions, including indirect CO₂, with land use, land-use change and forestry									NA

Note: HFCs, PFCs, unspecified mixture of HFCs and PFCs and NF₃ are applied flexibility according to paragraph 48 of annex to Decision 18/CMA.1 and applied the notation key "FL".

(a) For carbon dioxide (CO₂) from land use, land-use change and forestry the net emissions/removals are to be reported. For the purposes of reporting, the signs for removals are always negative (-) and for emissions positive (+).

(b) See footnote 7 to table Summary 1.A.

(c) In accordance with the UNFCCC Annex I inventory reporting guidelines, for Parties that decide to report indirect CO₂, the national totals shall be provided with and without indirect CO₂.

Documentation box:

HFCs, PFCs, unspecified mixture of HFCs and PFCs and NF₃ are applied flexibility according to paragraph 48 of annex to Decision 18/CMA.1 and applied the notation key "FL".
Years 1990–1999, 2001–2009, 2011–2019 are applied flexibility according to paragraph 57 of annex to Decision 18/CMA.1 and applied the notation key "FL".
The year 2004 is applied flexibility according to paragraph 58 of annex to Decision 18/CMA.1 and applied the notation key "FL".

Example 7: the use of notation keys, notes and documentation box.

TABLE 10 EMISSION TRENDS

SUMMARY

(Sheet 6 of 6)

GREENHOUSE GAS EMISSIONS	Base year ⁽¹⁾	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	Change from base to latest reported year (%)
	CO ₂ equivalent (kt)																																			
CO ₂ emissions without net CO ₂ from LULUCF	FL	FL	FL	FL	FL	FL	FL	FL	FL	FL	FL	58,544.69	FL	FL	FL	FL	FL	FL	FL	FL	FL	60,164.69	FL	FL	FL	FL	FL	FL	FL	FL	60,164.69	59,155.85	61,930.72	FL	-29.31	
CO ₂ emissions with net CO ₂ from LULUCF	FL	FL	FL	FL	FL	FL	FL	FL	FL	FL	FL	57,686.85	FL	FL	FL	FL	FL	FL	FL	FL	FL	57,688.86	FL	FL	FL	FL	FL	FL	FL	FL	57,688.86	57,253.12	57,484.03	FL	-34.85	
CH ₄ emissions without CH ₄ from LULUCF	FL	FL	FL	FL	FL	FL	FL	FL	FL	FL	FL	8,923.16	FL	FL	FL	FL	FL	FL	FL	FL	FL	8,900.48	FL	FL	FL	FL	FL	FL	FL	FL	8,900.48	8,843.04	9,074.78	FL	-33.00	
CH ₄ emissions with CH ₄ from LULUCF	FL	FL	FL	FL	FL	FL	FL	FL	FL	FL	FL	8,949.01	FL	FL	FL	FL	FL	FL	FL	FL	FL	8,919.34	FL	FL	FL	FL	FL	FL	FL	FL	8,919.34	8,863.21	9,093.16	FL	-32.94	
N ₂ O emissions without N ₂ O from LULUCF	FL	FL	FL	FL	FL	FL	FL	FL	FL	FL	FL	5,367.24	FL	FL	FL	FL	FL	FL	FL	FL	FL	5,841.04	FL	FL	FL	FL	FL	FL	FL	FL	5,841.04	5,106.45	5,102.61	FL	-48.19	
N ₂ O emissions with N ₂ O from LULUCF	FL	FL	FL	FL	FL	FL	FL	FL	FL	FL	FL	5,432.00	FL	FL	FL	FL	FL	FL	FL	FL	FL	5,902.62	FL	FL	FL	FL	FL	FL	FL	FL	5,902.62	5,170.03	5,166.72	FL	-47.67	
HFCs	FL	FL	FL	FL	FL	FL	FL	FL	FL	FL	FL	FL	FL	FL	FL	FL	FL	FL	FL	FL	FL	FL	FL	FL	FL	FL	FL	FL	FL	FL	FL	FL	FL	FL	100.00	
PFCs	FL	FL	FL	FL	FL	FL	FL	FL	FL	FL	FL	FL	FL	FL	FL	FL	FL	FL	FL	FL	FL	FL	FL	FL	FL	FL	FL	FL	FL	FL	FL	FL	FL	FL	-24.40	
Unspecified mix of HFCs and PFCs	FL	FL	FL	FL	FL	FL	FL	FL	FL	FL	FL	FL	FL	FL	FL	FL	FL	FL	FL	FL	FL	FL	FL	FL	FL	FL	FL	FL	FL	FL	FL	FL	FL	FL	0.00	
SF ₆	FL	FL	FL	FL	FL	FL	FL	FL	FL	FL	FL	84.04	FL	FL	FL	FL	FL	FL	FL	FL	FL	82.96	FL	FL	FL	FL	FL	FL	FL	FL	82.96	66.71	78.40	FL	1,433.60	
NF ₃	FL	FL	FL	FL	FL	FL	FL	FL	FL	FL	FL	FL	FL	FL	FL	FL	FL	FL	FL	FL	FL	FL	FL	FL	FL	FL	FL	FL	FL	FL	FL	FL	FL	FL	0.00	
Total (without LULUCF)	FL	FL	FL	FL	FL	FL	FL	FL	FL	FL	FL	73,427.06	FL	FL	FL	FL	FL	FL	FL	FL	FL	75,568.66	FL	FL	FL	FL	FL	FL	FL	FL	75,568.66	73,899.52	77,037.15	FL	-30.74	
Total (with LULUCF)	FL	FL	FL	FL	FL	FL	FL	FL	FL	FL	FL	72,659.83	FL	FL	FL	FL	FL	FL	FL	FL	FL	73,173.26	FL	FL	FL	FL	FL	FL	FL	FL	73,173.26	72,080.55	72,672.96	FL	-35.02	
Total (without LULUCF, with indirect)	FL	FL	FL	FL	FL	FL	FL	FL	FL	FL	FL	NA	FL	FL	FL	FL	FL	FL	FL	FL	FL	NA	FL	FL	FL	FL	FL	FL	FL	FL	NA	NA	NA	FL	0.00	
Total (with LULUCF, with indirect)	FL	FL	FL	FL	FL	FL	FL	FL	FL	FL	FL	NA	FL	FL	FL	FL	FL	FL	FL	FL	FL	NA	FL	FL	FL	FL	FL	FL	FL	FL	NA	NA	NA	FL	0.00	

GREENHOUSE GAS SOURCE AND SINK CATEGORIES	Base year ⁽¹⁾	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	Change from base to latest reported year (%)
	CO ₂ equivalent (kt)																																			
1. Energy	FL	FL	FL	FL	FL	FL	FL	FL	FL	FL	FL	54,663.46	FL	FL	FL	FL	FL	FL	FL	FL	FL	55,380.27	FL	FL	FL	FL	FL	FL	FL	FL	56,583.04	55,380.27	58,360.47	FL	-29.16	
2. Industrial processes and product use	FL	FL	FL	FL	FL	FL	FL	FL	FL	FL	FL	8,293.37	FL	FL	FL	FL	FL	FL	FL	FL	FL	7,703.65	FL	FL	FL	FL	FL	FL	FL	FL	8,297.83	7,703.65	7,959.89	FL	-38.15	
3. Agriculture	FL	FL	FL	FL	FL	FL	FL	FL	FL	FL	FL	6,100.63	FL	FL	FL	FL	FL	FL	FL	FL	FL	6,317.11	FL	FL	FL	FL	FL	FL	FL	FL	6,283.97	6,317.11	6,143.84	FL	-49.12	
4. Land use, land-use change and forestry ⁽⁵⁾	FL	FL	FL	FL	FL	FL	FL	FL	FL	FL	FL	-767.22	FL	FL	FL	FL	FL	FL	FL	FL	FL	-1,818.97	FL	FL	FL	FL	FL	FL	FL	FL	-2,395.40	-1,818.97	-4,364.20	FL	223.97	
5. Waste	FL	FL	FL	FL	FL	FL	FL	FL	FL	FL	FL	4,369.59	FL	FL	FL	FL	FL	FL	FL	FL	FL	4,498.49	FL	FL	FL	FL	FL	FL	FL	FL	4,403.83	4,498.49	4,572.95	FL	30.62	
6. Other	FL	FL	FL	FL	FL	FL	FL	FL	FL	FL	FL	NO	FL	FL	FL	FL	FL	FL	FL	FL	FL	NO	FL	FL	FL	FL	FL	FL	FL	FL	NO	NO	NO	FL	0.00	
Total (including LULUCF) ⁽⁵⁾	FL	FL	FL	FL	FL	FL	FL	FL	FL	FL	FL	72,659.83	FL	FL	FL	FL	FL	FL	FL	FL	FL	72,080.55	FL	FL	FL	FL	FL	FL	FL	FL	73,173.26	72,080.55	72,672.96	FL	-35.02	

Note: HFCs, PFCs, unspecified mixture of HFCs and PFCs and NF₃ are applied flexibility according to paragraph 48 of annex to Decision 18/CMA.1 and applied the notation key "FL".

Note2: Years 1990–1999, 2001–2009, 2011–2019 are applied flexibility according to paragraph 57 of annex to Decision 18/CMA.1 and applied the notation key "FL".

Note3: the Year 2023 is applied flexibility according to paragraph 58 of annex to Decision 18/CMA.1 and applied the notation key "FL".

⁽¹⁾ The column "Base year" should be filled in only by those Parties with economies in transition that use a base year different from 1990 in accordance with the relevant decisions of the COP. For these Parties, this different base year is used to calculate the percentage change in the final column of this table.

⁽²⁾ Fill in net emissions/removals as reported in table Summary 1.A. For the purposes of reporting, the signs for removals are always negative (-) and for emissions positive (+).

⁽³⁾ In accordance with the UNFCCC reporting guidelines, for Parties that decide to report indirect CO₂, the national totals shall be provided with and without indirect CO₂.

⁽⁴⁾ In accordance with the UNFCCC reporting guidelines, HFC and PFC emissions should be reported for each relevant chemical. However, if it is not possible to report values for each chemical (i.e. mixtures, confidential data, lack of disaggregation), this row could be used for reporting aggregate figures for HFCs and PFCs, respectively. Note that the unit used for this row is kt of CO₂ equivalent and that appropriate notation keys should be entered in the cells for the individual chemicals.

Documentation box:

- Parties should provide detailed explanations on emissions trends in chapter 2: Trends in Greenhouse Gas Emissions and, as appropriate, in the corresponding Chapters 3- 8 of the national inventory report (NIR). Use this documentation box to provide references to relevant sections of the NIR if any additional information and further details are needed to understand the content of this table.
- Use the documentation box to provide explanations if potential emissions are reported.

HFCs, PFCs, unspecified mixture of HFCs and PFCs and NF₃ are applied flexibility according to paragraph 48 of annex to Decision 18/CMA.1 and applied the notation key "FL".

Years 1990–1999, 2001–2009, 2011–2019 are applied flexibility according to paragraph 57 of annex to Decision 18/CMA.1 and applied the notation key "FL".

the Year 2023 is applied flexibility according to paragraph 58 of annex to Decision 18/CMA.1 and applied the notation key "FL".

Annex IV: Background information provided during the informal consultations

The secretariat was invited to present information on the reporting tables currently used by developed and developing countries, and options for implementing these flexibilities, as included in Parties' submissions. The presentations are available at <https://unfccc.int/event/sbsta-51#eq-23>.

The current common reporting format (CRF) tables for developed countries are available at:

- **Sectoral tables for energy, industrial processes and product use and waste**

http://unfccc.int/files/national_reports/annex_i_ghg_inventories/reporting_requirements/application/vnd.openxmlformats-officedocument.spreadsheetml.sheet/set_1_energy.ippu.waste_final_16nov13.xlsx.

- **Sectoral tables for agriculture and land use, land-use change and forestry**

http://unfccc.int/files/national_reports/annex_i_ghg_inventories/reporting_requirements/application/vnd.openxmlformats-officedocument.spreadsheetml.sheet/set_2_afolu_final_16nov13.xlsx.

- **Summary and other cross-sectoral tables**

http://unfccc.int/files/national_reports/annex_i_ghg_inventories/reporting_requirements/application/vnd.openxmlformats-officedocument.spreadsheetml.sheet/set_3_cross-sectoral_final_16nov13.xlsx.

The national communication reporting tables (tables 1 and 2 in the annex to decision 17/CP.8) are available at:

<https://unfccc.int/sites/default/files/resource/docs/cop8/07a02.pdf#page=11>.
