Framework Convention on Climate Change

FCCC/WEB/AGI/2020

26 June 2020

Aggregate information on greenhouse gas emissions by sources and removals by sinks for Parties included in Annex I to the Convention

Note by the secretariat

Contents

I. Mandate

1. The Conference of the Parties (COP), by its decision 13/CP.20, adopted the revised guidelines for the technical review of greenhouse gas (GHG) inventories from Parties included in Annex I to the Convention (Annex I Parties). As part of the process for the technical review of GHG inventories, the COP requested the secretariat to compile and tabulate aggregate information on greenhouse gas emissions by sources and removals by sinks and trends from the latest available GHG inventory submissions of Annex I Parties and publish this information in a stand-alone document.[1]

2. Pursuant to decision 4/CMP.11, the initial check and the scope of the individual review shall be conducted consistent with the initial assessment and apply the relevant provisions for the review contained in decision 13/CP.20.

3. The COP, by its decision 24/CP.19, adopted the revised "Guidelines for the preparation of national communications by Parties included in Annex I to the Convention, Part I: UNFCCC reporting guidelines on annual inventories" (hereinafter referred to as the UNFCCC reporting guidelines) and a revised set of common reporting format (CRF) tables[2] to be used by Annex I Parties to report quantitative GHG inventory data. Similarly, the Conference of the Parties serving as the meeting of the Parties to the Kyoto Protocol (CMP), by decision 6/CMP.9, adopted the revised CRF tables[3] that Parties shall use for reporting information on anthropogenic greenhouse gas emissions by sources and removals by sinks from land use, land-use change and forestry (LULUCF) activities under Article 3, paragraphs 3 and 4, of the Kyoto Protocol in the second commitment period.

II. Comparison of greenhouse gas inventory information

A. Approach

4. This document contains GHG inventory information compiled in tabular format. The tables provide information on emissions by sources and removals by sinks, implied emission factors (IEFs), and activity data (AD) reported by Annex I Parties. In addition, the tables contain information on the methods and emission factors used, activity data from international sources and other information relating to GHG inventory estimates. This information is provided for both the base year/period and for the year 2018.

5. Where it has been submitted, pages 50–73 of this document also contain inventory information on anthropogenic GHG emissions by sources and removals by sinks from LULUCF activities under Article 3, paragraph 3, forest management under Article 3, paragraph 4, and any elected activities under Article 3, paragraph 4, of the Kyoto Protocol, reported in accordance with decision 15/CMP.1, in conjunction with decision 3/CMP.11.

6. The information provided in this document is based on information in the CRF tables of the 2020 national GHG inventories received from Parties as at 27 May 2020.

[1] Decision 13/CP.20, paragraph 8.

[2] The tables, agreed in decision 24/CP.19, can be accessed here: <https://unfccc.int/process/transparency-and-reporting/reporting-and-review-under-the-convention/greenhouse-gas-inventories-annex-i-parties/reporting-requirements/use-of-the-2006-ipcc-guidelines-for-national-greenhouse-gas-inventories-and-revision-of-the-unfccc>.

[3] The tables, agreed in decision 6/CMP.9, can be accessed here: <https://unfccc.int/process/transparency-and-reporting/reporting-and-review-under-the-kyoto-protocol/overview/initial-reports-under-the-kyoto-protocol-parties-included-in-annex-i/implications-of-the-implementation-of-decisions-2/cmp7-to-4/cmp7-and-1/cmp8-on-the-previous>.

7. The GHG inventory data is presented according to the sectors, subsectors and categories specified in the CRF tables.

8. As at 27 May 2020, 44 Parties had submitted their CRF tables, including Kazakhstan, which is an Annex I Party for the purposes of the Kyoto Protocol, while remaining a Party not included in Annex I to the Convention for the purposes of the Convention.

9. Four Parties, Denmark, the European Union (EU), France and the United Kingdom of Great Britain and Northern Ireland, provided more than one set of CRF tables in order to address the different geographical areas used for reporting under the Convention and under the Kyoto Protocol. For the purposes of this document, the following naming conventions are used to identify inventory submissions under the Convention: Denmark (Convention), covering the Kingdom of Denmark (Denmark mainland, Greenland and Faroe Islands); European Union (Convention), covering its 28 member States; France (Convention) covering metropolitan France, the French Overseas Departments, the French Overseas Collectivities and New Caledonia; and United Kingdom of Great Britain and Northern Ireland (Convention), covering United Kingdom, the Crown Dependencies, Bermuda, Cayman Islands, Falkland Islands and Gibraltar. The following naming conventions are used to identify inventory submissions under the Kyoto Protocol: Denmark (KP), covering Denmark mainland; European Union (KP), covering its 28 member States and Iceland; France (KP), covering metropolitan France and the French Overseas Departments (including Mayotte); and United Kingdom of Great Britain and Northern Ireland (KP), covering United Kingdom, the Crown Dependencies, Cayman Islands, Falkland Islands and Gibraltar.

10. The information contained in this report is not intended as a judgment of whether inventory problems exist, but as an indication of potential issues that need to be considered further during the individual review by the expert review team.

B. Explanatory notes to the tables

11. Blank cells in a table indicate that a Party did not report information for a given category, gas, AD or other parameter. Where a Party's value is very small compared with that of other Parties, it has been rounded to zero (0.00 or 0.000). Where a Party reports a zero numerical value, a zero value (0) is shown.

12. In tables where shares or contributions of categories, gases, AD or other parameters to a total are shown (e.g. contribution of specific fuel type to the total emissions of a combustion category), where a Party reports a notation key, zero value (0) or blank in either the numerator or denominator of the calculation, the share or contribution to the total is shown using the symbol "–".

13. The differences in AD between the values reported by Parties and international data sources were calculated as percentage deviations from the AD provided by the Party. A positive number indicates that the data from the international data source are higher than the data reported by the Party. Similarly, a negative number indicates that data from the international data source are lower than the data reported by the Party.

14. References to the base year refer to 1990, except for the following Parties with economies in transition which, in accordance with decisions 9/CP.2 and 11/CP.4, use base years other than 1990: Bulgaria (1988), Hungary (average 1985–1987), Poland (1988), Romania (1989) and Slovenia (1986).

15. The column "Share of national total" in the tables indicates the contribution of that category to the Party's national total of GHG emissions in terms of carbon dioxide equivalent, without emissions and removals from LULUCF, but including indirect CO_2 emissions where reported.

16. Where Parties used notation keys “NO”, “NE”, “NA”, “IE” or “C”, these have been reproduced verbatim from the CRF tables provided by Parties. The notation keys, as described in the UNFCCC reporting guidelines, are as follows:

NO	Not occurring	IE	Included elsewhere
NE	Not estimated	C	Confidential
NA	Not applicable		

17. Where Parties used notation keys “R”, “NO”, “NR” or “IE”, these have been reproduced verbatim from the tables provided by Parties. The notations keys, as described in the tables referred to in decision 6/CMP.9, are as follows:

R	Reported	NR	Not reported
NO	Not occurring	IE	Included elsewhere

18. Tables on energy indicate whether IEFs given in the CRF tables are based on gross calorific value (GCV) or net calorific value (NCV). Australia, Canada, Japan, New Zealand and United States of America reported energy data on a GCV basis, whilst Denmark reported using a combination of GCV and NCV. Hence, reported IEFs are about 5 per cent lower for liquid, solid and other fuels, and about 10 per cent lower for gaseous fuels than would have been the case if the data were given on a net calorific value (NCV) basis.

19. The following chemical formulae or abbreviations for GHGs are used in this document:

C	carbon
CH_4	methane
CO_2	carbon dioxide
HFCs	hydrofluorocarbons
N_2O	nitrous oxide
NF_3	nitrogen trifluoride
NMVOC	non-methane volatile organic compound
PFCs	perfluorocarbons
SF_6	sulphur hexafluoride

20. To indicate the methods and emission factors used by Parties, the following abbreviations have been used (see also footnotes to Summary table 3 of the CRF) in this document:

Methods:		Emission factors:	
D	IPCC default	D	IPCC default
RA	Reference approach	CR	CORINAIR
T1	IPCC tier 1	CS	Country specific
T1a	IPCC tier 1a	PS	Plant specific
T1b	IPCC tier 1b	M	Model
T1c	IPCC tier 1c	OTH	Other
T2	IPCC tier 2		
T3	IPCC tier 3		

CR	CORINAIR
CS	Country specific
M	Model
OTH	Other

21. The following units have been used in this document:

kg	kilogram (10^3 grams)
kt	kilotonne (10^9 grams)
Mg	megagram (10^6 grams) – same as tonne
t	tonne (10^6 grams)
Mt	megatonne (10^{12} grams)
TJ	terajoule (10^{12} joules)
PJ	petajoule (10^{15} joules)
km	kilometre
ha	hectare
kha	thousand hectares
m^3	cubic metre

22. The following abbreviations have been used in this document:

AB	area burned
AD	activity data
BB	biomass burned
CO	carbon monoxide
CRF	common reporting format
CSC	carbon stock change
dm	dry matter
DOM	dead organic matter
EF	emission factor
FAO	Food and Agriculture Organization of the United Nations
GCV	gross calorific value
GHG	greenhouse gas
IEA	International Energy Agency
IEF	implied emission factor
LPG	liquefied petroleum gas
LULUCF	land use, land-use change and forestry
N	nitrogen
NCV	net calorific value
NIR	national inventory report

NMVOC	non-methane volatile organic compounds
NO_X	nitrogen oxides
yr	year

C. List of sectoral figures and tables with information submitted under decision 24/CP.19

1. General

Figure number	Figure name
Figure G.1	GHG emissions by gas (with LULUCF): base year and 2018
Figure G.2	GHG emissions by gas (without LULUCF): base year and 2018
Figure G.3	GHG emissions by sector (without LULUCF): base year and 2018

Table number	Table name
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2. Energy

Figure number	Figure name
Figure 1.1	Contribution of subsectors to total GHG emissions in the Energy sector

Table number	Table name
Table 1.1	CO_2 emissions from fuel combustion: reference approach and sectoral approach
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Table 1.4	Stationary combustion: gaseous fuels – CO_2 (2018)
Table 1.5	Stationary combustion: other fossil fuels – CO_2 (2018)
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Table 1.11b	Fugitive emissions from fuels: oil and natural gas – oil – CH_4, CO_2 (2018)
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Table 1.11d	Fugitive emissions from fuels: oil and natural gas – venting and flaring – CH_4, CO_2 (2018)
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3. Industrial processes and product use

Figure number	Figure name
Figure 2.1	Contribution of subsectors to total GHG emissions in the Industrial processes and product use sector

Table number	Table name
Table 2.1	Mineral industry – CO_2 (2018)
Table 2.2	Chemical industry – CO_2 and N_2O (2018)
Table 2.3	Metal industry – CO_2 (2018)
Table 2.4	HFCs, PFCs, SF_6 and NF_3 (2018)

4. Agriculture

Figure number	Figure name
Figure 3.1	Contribution of subsectors to total GHG emissions in the Agriculture sector

Table number	Table name
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Table 3.2	Manure management – CH_4 (2018)
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Table 4.5	Land area (2018)

6. Waste

Figure number	Figure name
Figure 5.1	Contribution of subsectors to total GHG emissions in the Waste sector

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D. List of tables with information submitted under Article 7, paragraph 1, of the Kyoto Protocol in accordance with decisions 15/CMP.1, in conjunction with 3/CMP.11, and 6/CMP.9

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Table 6.3(h)	Revegetation - area and implied carbon stock change factors from the change in carbon stocks for 2018
Table 6.3(i)	Revegetation - area and implied carbon stock change factors from the change in carbon stocks for the base year
Table 6.3(j)	Wetland drainage and rewetting - area and implied carbon stock change factors from the change in carbon stocks for 2018
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Table 6.6	N_2O emissions from N mineralization/immobilization due to carbon loss/gain associated with land-use conversions and management change in mineral soils for 2018
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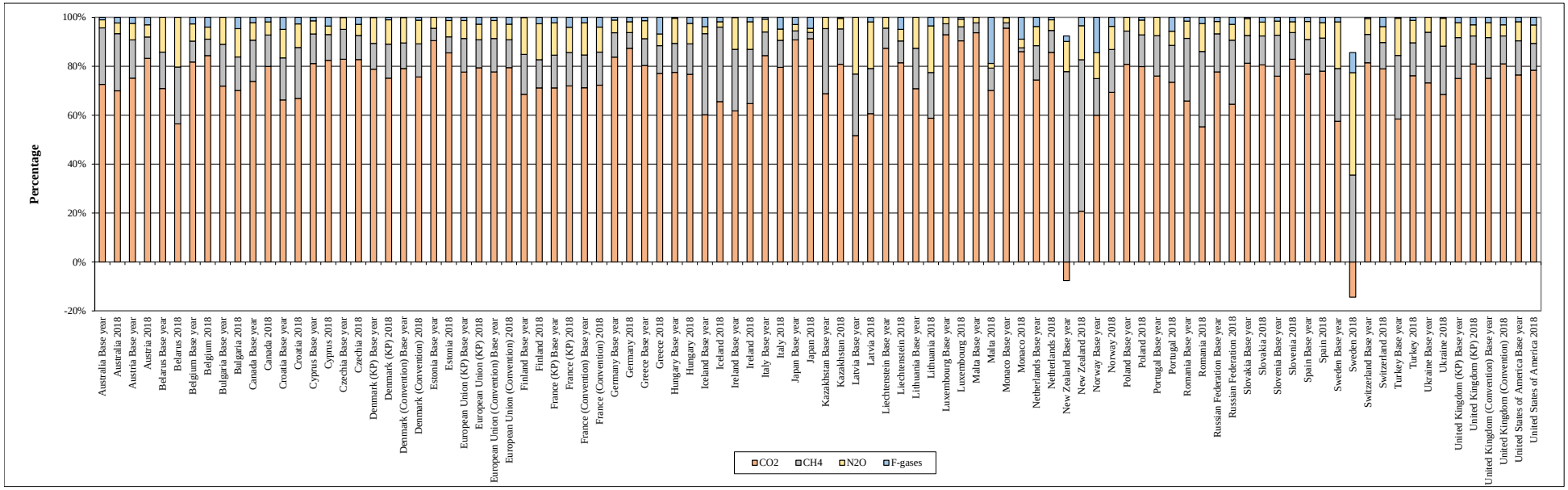
Table 6.7(c)	Emissions from biomass burning on grazing land management land

Table 6.7(d)	Emissions from biomass burning on revegetation land
Table 6.7(e)	Emissions from biomass burning on wetland drainage and rewetting land

Figure G.1

GHG emissions by gas[a] (with LULUCF): base year[b] and 2018

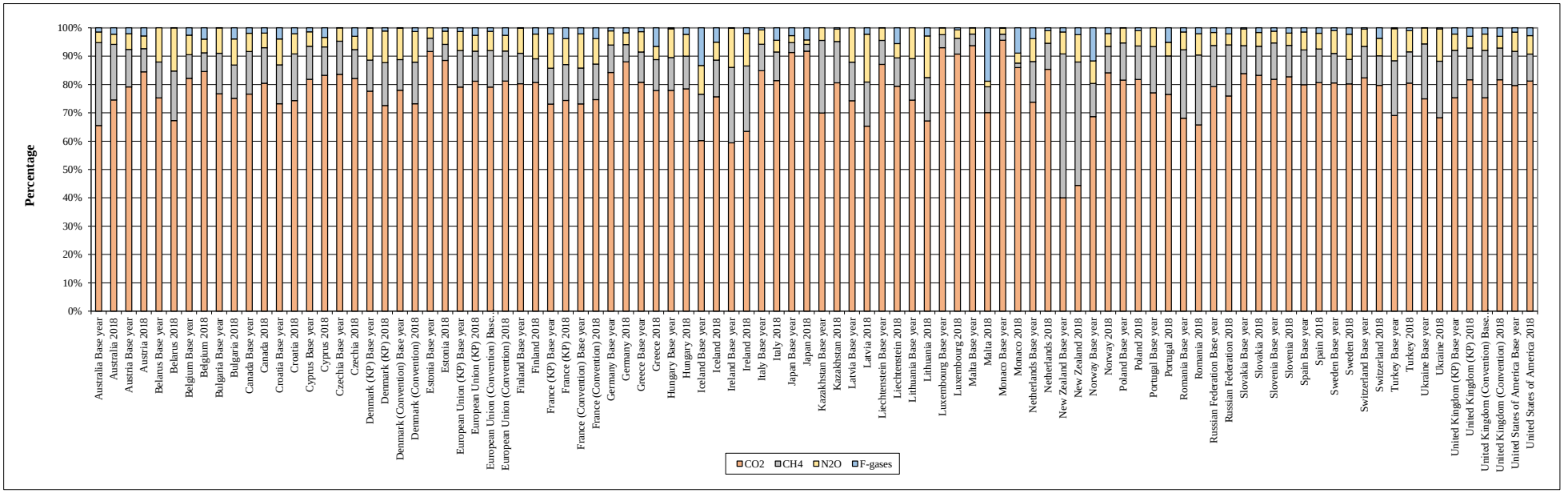


[a] The national totals and emissions by CO_2 in this graph include indirect CO_2 emissions from the atmospheric oxidation of CH_4, CO and NMVOCs for the following Parties: Canada, Czechia, Denmark (KP), Denmark (Convention), European Union (KP), European Union (Convention), Finland, Japan, Latvia, Netherlands, Portugal and Switzerland.

[b] In accordance with the UNFCCC reporting guidelines on annual inventories of Annex I Parties the year 1990 should be the base year for the estimation and reporting of inventories. However, in accordance with decisions 9/CP.2, 11/CP.4, and 7/CP.12 some Parties with economies in transition use base years other than 1990: Bulgaria (1988), Croatia (1990), Hungary (average of 1985 to 1987), Poland (1988), Romania (1989) and Slovenia (1986).

Figure G.2

GHG emissions by gas[a] (without LULUCF): base year[b] and 2018

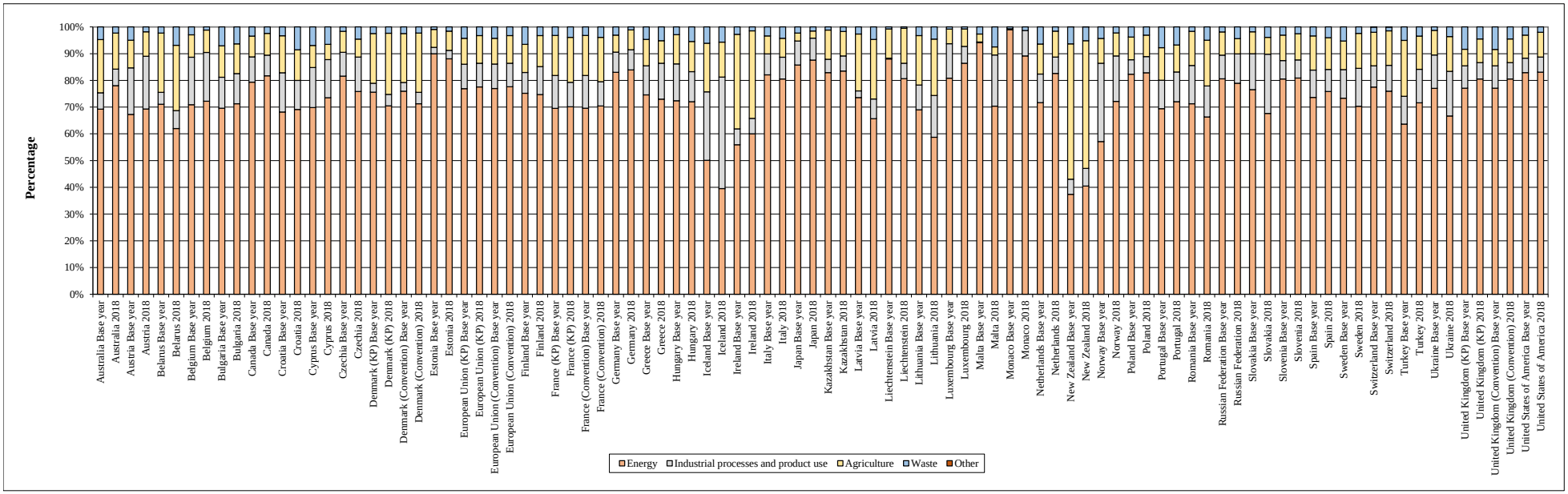


[a] The national totals and emissions by CO_2 in this graph include indirect CO_2 emissions from the atmospheric oxidation of CH_4, CO and NMVOCs for the following Parties: Canada, Czechia, Denmark (KP), Denmark (Convention), European Union (KP), European Union (Convention), Finland, Japan, Latvia, Netherlands, Portugal and Switzerland.

[b] In accordance with the UNFCCC reporting guidelines on annual inventories of Annex I Parties the year 1990 should be the base year for the estimation and reporting of inventories. However, in accordance with decisions 9/CP.2, 11/CP.4, and 7/CP.12 some Parties with economies in transition use base years other than 1990: Bulgaria (1988), Croatia (1990), Hungary (average of 1985 to 1987), Poland (1988), Romania (1989) and Slovenia (1986).

Figure G.3

GHG emissions[a] by sector (without LULUCF): base year[b] and 2018



[a] The national totals and emissions by CO_2 in this graph include indirect CO_2 emissions from the atmospheric oxidation of CH_4, CO and NMVOCs for the following Parties: Canada, Czechia, Denmark (KP), Denmark (Convention), European Union (KP), European Union (Convention), Finlan Netherlands, Portugal and Switzerland.

[b] In accordance with the UNFCCC reporting guidelines on annual inventories of Annex I Parties the year 1990 should be the base year for the estimation and reporting of inventories. However, in accordance with decisions 9/CP.2, 11/CP.4, and 7/CP.12 some Parties with economies in transition use base years other than 1990: Bulgaria (1988), Croatia (1990), Hungary (average of 1985 to 1987), Poland (1988), Romania (1989) and Slovenia (1986).

Table G.1

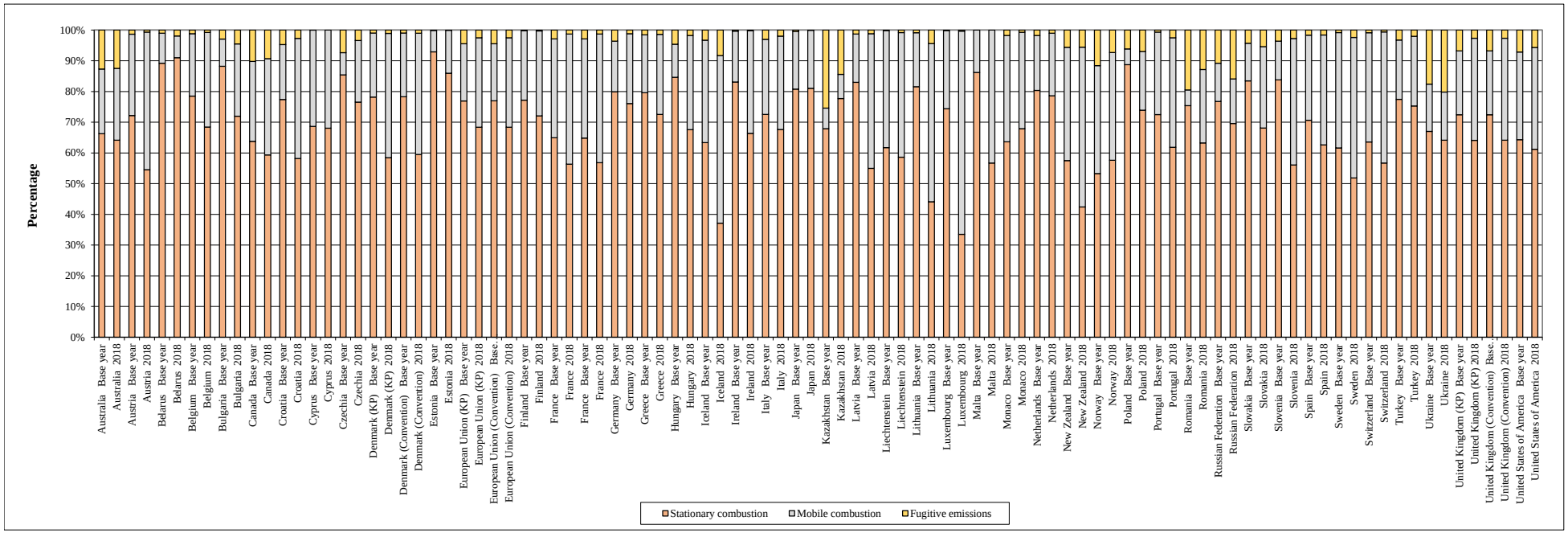
Submissions used in this report

Party	Initial submission date	CRF for years	NIR	CRF submission date and version used in this report	CRF Reporter version (version used in this report)	CRF KP LULUCF [a] submission date and version used in this report	CRF KP LULUCF [a] Reporter version (version used in this report)
Australia	27 May 2020	1990-2018	27 May 2020	27 May 2020 (1)	6.0.8	27 May 2020 (1)	6.0.8
Austria	15 April 2020	1990-2018	15 April 2020	15 April 2020 (2)	6.0.8	15 April 2020 (2)	6.0.8
Belarus	15 April 2020	1990-2018	15 April 2020	15 April 2020 (2)	6.0.8		
Belgium	14 April 2020	1990-2018	14 April 2020	14 April 2020 (1)	6.0.8	14 April 2020 (1)	6.0.8
Bulgaria	15 April 2020	1988-2018	15 April 2020	15 April 2020 (1)	6.0.8	15 April 2020 (1)	6.0.8
Canada	14 April 2020	1990-2018	14 April 2020	14 April 2020 (1)	6.0.8	NA	NA
Croatia	10 April 2020	1990-2018	10 April 2020	10 April 2020 (1)	6.0.8	10 April 2020 (1)	6.0.8
Cyprus	15 April 2020	1990-2018	26 May 2020	26 May 2020 (5)	6.0.8	26 May 2020 (5)	6.0.8
Czechia	14 April 2020	1990-2018	07 May 2020	14 April 2020 (1)	6.0.8	14 April 2020 (1)	6.0.8
Denmark (KP)	15 April 2020	1990-2018	25 May 2020	25 May 2020 (5)	6.0.8	25 May 2020 (5)	6.0.8
Denmark (Convention)	15 April 2020	1990-2018	25 May 2020	25 May 2020 (4)	6.0.8	NA	NA
Estonia	13 April 2020	1990-2018	13 April 2020	13 April 2020 (1)	6.0.8	13 April 2020 (1)	6.0.8
European Union (KP)	15 April 2020	1990-2018	27 May 2020	27 May 2020 (2)	6.0.8	27 May 2020 (2)	6.0.8
European Union (Convention)	15 April 2020	1990-2018	27 May 2020	27 May 2020 (2)	6.0.8	NA	NA
Finland	9 April 2020	1990-2018	09 April 2020	09 April 2020 (4)	6.0.8	09 April 2020 (4)	6.0.8
France (KP)	15 April 2020	1990-2018	15 April 2020	15 April 2020 (1)	6.0.8	15 April 2020 (1)	6.0.8
France (Convention)	15 April 2020	1990-2018	15 April 2020	15 April 2020 (3)	6.0.8	NA	NA
Germany	18 March 2020	1990-2018	15 April 2020	18 March 2020 (1)	6.0.8	18 March 2020 (1)	6.0.8
Greece	14 April 2020	1990-2018	14 April 2020	14 April 2020 (1)	6.0.8	14 April 2020 (1)	6.0.8
Hungary	15 April 2020	1985-87, 1986-2018	15 April 2020	15 April 2020 (3)	6.0.8	15 April 2020 (3)	6.0.8
Iceland	15 April 2020	1990-2018	15 April 2020	15 April 2020 (1)	6.0.8	15 April 2020 (1)	6.0.8
Ireland	15 April 2020	1990-2018	15 April 2020	15 April 2020 (3)	6.0.8	15 April 2020 (3)	6.0.8
Italy	12 April 2020	1990-2018	12 April 2020	12 April 2020 (1)	6.0.8	12 April 2020 (1)	6.0.8
Japan	14 April 2020	1990-2018	14 April 2020	14 April 2020 (1)	6.0.8	14 April 2020 (1)	6.0.8
Kazakhstan	15 April 2020	1990-2018		15 April 2020 (5)	6.0.8	15 April 2020 (5)	6.0.8
Latvia	14 April 2020	1990-2018	11 May 2020	14 April 2020 (2)	6.0.8	14 April 2020 (2)	6.0.8
Liechtenstein	15 April 2020	1990-2018	15 April 2020	15 April 2020 (1)	6.0.8	15 April 2020 (1)	6.0.8
Lithuania	15 April 2020	1990-2018	15 April 2020	15 April 2020 (1)	6.0.8	15 April 2020 (1)	6.0.8
Luxembourg	15 April 2020	1990-2018	27 May 2020	15 April 2020 (1)	6.0.8	15 April 2020 (1)	6.0.8
Malta	8 April 2020	1990-2018	13 April 2020	08 April 2020 (2)	6.0.8	08 April 2020 (2)	6.0.8
Monaco	15 April 2020	1990-2018	15 April 2020	15 April 2020 (1)	6.0.8	15 April 2020 (1)	6.0.8
Netherlands	15 April 2020	1990-2018	15 April 2020	15 April 2020 (2)	6.0.8	15 April 2020 (2)	6.0.8
New Zealand	15 April 2020	1990-2018	15 April 2020	15 April 2020 (1)	6.0.8	15 April 2020 (1)	6.0.8
Norway	3 April 2020	1990-2018	03 April 2020	03 April 2020 (2)	6.0.8	03 April 2020 (2)	6.0.8
Poland	15 April 2020	1988-2018	15 April 2020	15 April 2020 (1)	6.0.8	15 April 2020 (1)	6.0.8
Portugal	3 April 2020	1990-2018	03 April 2020	03 April 2020 (1)	6.0.8	03 April 2020 (1)	6.0.8
Romania	14 April 2020	1989-2018	06 May 2020	06 May 2020 (9)	6.0.8	06 May 2020 (9)	6.0.8
Russian Federation	15 April 2020	1990-2018	15 April 2020	15 April 2020 (3)	6.0.8	15 April 2020 (3)	6.0.8
Slovakia	14 April 2020	1990-2018	21 May 2020	14 April 2020 (3)	6.0.8	14 April 2020 (3)	6.0.8
Slovenia	13 April 2020	1986-2018	15 April 2020	13 April 2020 (5)	6.0.8	13 April 2020 (5)	6.0.8
Spain	6 April 2020	1990-2018	25 May 2020	06 April 2020 (1)	6.0.8	06 April 2020 (1)	6.0.8
Sweden	14 April 2020	1990-2018	14 April 2020	14 April 2020 (3)	6.0.8	14 April 2020 (3)	6.0.8
Switzerland	14 April 2020	1990-2018	14 April 2020	14 April 2020 (1)	6.0.8	14 April 2020 (1)	6.0.8
Turkey	13 April 2020	1990-2018	13 April 2020	13 April 2020 (1)	6.0.8	NA	NA
Ukraine	25 May 2020	1990-2018	25 May 2020	25 May 2020 (2)	6.0.8	25 May 2020 (2)	6.0.8
United Kingdom of Great Britain and Northern Ireland (KP)	14 April 2020	1990-2018	15 April 2020	14 April 2020 (1)	6.0.8	14 April 2020 (1)	6.0.8
United Kingdom of Great Britain and Northern Ireland (Convention)	15 April 2020	1990-2018	15 April 2020	15 April 2020 (1)	6.0.8	NA	NA
United States of America	14 April 2020	1990-2018	14 April 2020		6.0.8	NA	NA

[a] The tables of the common reporting format for the purpose of submission of information on anthropogenic greenhouse gas emissions by sources and removals by sinks from LULUCF activities under Article 3, paragraph 3, forest management, and, if any, elected activities under Article 3, paragraph 4, in accordance with Article 5, paragraph 2, of the Kyoto Protocol. These tables are contained in the annex to decision 6/CMP.9.

Figure 1.1

Contribution of subsectors to total GHG emissions in the Energy sector[a, b]



[a] In accordance with the UNFCCC reporting guidelines on annual inventories of Annex I Parties the year 1990 should be the base year for the estimation and reporting of inventories. However, in accordance with decisions 9/CP.2, 11/CP.4, and 7/CP.12 some Parties with economies in transition use base years other than 1990: Bulgaria (1988), Croatia (1990), Hungary (average of 1985 to 1987), Poland (1988), Romania (1989) and Slovenia (1986).

[b] Indirect CO_2 emissions are excluded from the totals in this graph.

Table 1.1

CO_2 emissions from fuel combustion: reference approach and sectoral approach[a]

	Reference approach	Sectoral approach	Difference
	(kt CO_2)		(%)
Australia Base year	254 499	251 676	1.12
Australia 2018	375 065	376 141	-0.29
Austria Base year	52 154	51 073	2.12
Austria 2018	54 329	53 355	1.83
Belarus Base year	116 452	95 842	21.50
Belarus 2018	56 276	55 585	1.24
Belgium Base year	91 858	101 543	-9.54
Belgium 2018	79 435	83 658	-5.05
Bulgaria Base year[b]	84 209	77 902	8.10
Bulgaria 2018	41 217	38 672	6.58
Canada Base year	419 732	415 460	1.03
Canada 2018	529 060	526 977	0.40
Croatia Base year[b]	20 165	20 056	0.54
Croatia 2018	15 369	15 406	-0.24
Cyprus Base year	4 286	3 929	9.07
Cyprus 2018	6 441	6 439	0.03
Czechia Base year	150 039	146 782	2.22
Czechia 2018	92 351	91 902	0.49
Denmark Base year (KP)	51 129	51 295	-0.32
Denmark 2018 (KP)	32 181	32 696	-1.58
Denmark Base year (Convention)	51 761	52 585	-1.57
Denmark 2018 (Convention)	32 737	34 287	-4.52
Estonia Base year	36 584	35 934	1.81
Estonia 2018	22 107	17 301	27.78
European Union (KP) Base year	4 003 357	4 093 904	-2.21
European Union (KP) 2018	3 115 265	3 146 863	-1.00
European Union (Convention) Base year	4 001 414	4 090 038	-2.17
European Union (Convention) 2018	3 113 612	3 142 704	-0.93
Finland Base year	52 646	52 531	0.22
Finland 2018	41 782	41 144	1.55
France Base year (KP)	366 682	360 940	1.59
France 2018 (KP)	308 747	302 539	2.05
France Base year (Convention)	367 028	363 237	1.04
France 2018 (Convention)	311 649	308 869	0.90
Germany Base year	989 134	985 630	0.36
Germany 2018	703 315	702 102	0.17
Greece Base year	74 770	74 622	0.20
Greece 2018	63 750	65 571	-2.78
Hungary Base year[b]	74 437	74 365	0.10
Hungary 2018	43 629	43 827	-0.45
Iceland Base year	1 761	1 772	-0.60
Iceland 2018	1 641	1 733	-5.30
Ireland Base year	30 381	30 149	0.77
Ireland 2018	36 018	35 960	0.16
Italy Base year	398 862	403 586	-1.17
Italy 2018	318 982	329 988	-3.34
Japan Base year	1 070 837	1 078 839	-0.74
Japan 2018	1 091 869	1 077 487	1.33
Kazakhstan Base year	267 943	245 215	9.27
Kazakhstan 2018	272 878	280 235	-2.63
Latvia Base year	18 801	18 488	1.70
Latvia 2018	7 210	7 206	0.06
Liechtenstein Base year	199	199	0.01
Liechtenstein 2018	145	144	1.16
Lithuania Base year	32 541	32 219	1.00
Lithuania 2018	11 791	10 989	7.30
Luxembourg Base year	10 194	10 218	-0.24

Table 1.1

CO_2 emissions from fuel combustion: reference approach and sectoral approach[a]

	Reference approach	Sectoral approach	Difference
	(kt CO_2)		(%)
Luxembourg 2018	8 956	8 977	-0.24
Malta Base year	1 598	2 403	-33.50
Malta 2018	1 543	1 526	1.17
Monaco Base year	97	98	-1.14
Monaco 2018	74	74	-0.38
Netherlands Base year	153 002	154 481	-0.96
Netherlands 2018	150 969	151 524	-0.37
New Zealand Base year	21 015	22 049	-4.69
New Zealand 2018	30 570	29 804	2.57
Norway Base year	20 931	25 244	-17.08
Norway 2018	32 363	34 022	-4.88
Poland Base year[b]	480 515	438 905	9.48
Poland 2018	315 536	311 619	1.26
Portugal Base year	39 632	39 323	0.79
Portugal 2018	47 542	46 382	2.50
Romania Base year[b]	183 207	174 075	5.25
Romania 2018	67 954	65 424	3.87
Russian Federation Base year	2 362 968	2 264 027	4.37
Russian Federation 2018	1 538 418	1 464 543	5.04
Slovakia Base year	52 455	53 156	-1.32
Slovakia 2018	27 785	27 274	1.87
Slovenia Base year[b]	15 281	15 410	-0.83
Slovenia 2018	13 625	13 481	1.07
Spain Base year	216 793	206 838	4.81
Spain 2018	244 759	245 038	-0.11
Sweden Base year	42 303	50 836	-16.78
Sweden 2018	23 216	34 718	-33.13
Switzerland Base year	41 198	40 873	0.79
Switzerland 2018	34 943	34 686	0.74
Turkey Base year	135 417	129 662	4.44
Turkey 2018	368 315	359 644	2.41
Ukraine Base year	608 895	588 769	3.42
Ukraine 2018	175 563	178 374	-1.58
United Kingdom of Great Britain and Northern Ireland (KP) Base year	547 121	565 635	-3.27
United Kingdom of Great Britain and Northern Ireland (KP) 2018	350 802	360 410	-2.67
United Kingdom of Great Britain and Northern Ireland (Convention) Base year	547 898	566 342	-3.26
United Kingdom of Great Britain and Northern Ireland (Convention) 2018	351 510	361 121	-2.66
United States of America Base year	4 790 862	4 867 487	-1.57
United States of America 2018	5 098 272	5 177 502	-1.53

[a] Indirect CO_2 emissions are excluded from the totals in this table.

[b] In accordance with the UNFCCC reporting guidelines on annual inventories of Annex I Parties the year 1990 should be the base year for the estimation and reporting of inventories. However, in accordance with decisions 9/CP.2, 11/CP.4, and 7/CP.12 some Parties with economies in transition use base years other than 1990: Bulgaria (1988), Croatia (1990), Hungary (average of 1985 to 1987), Poland (1988), Romania (1989) and Slovenia (1986).

Table 1.2

Stationary combustion: liquid fuels - CO_2 (2018)

	Share of national total[a]	IEF in CRF based on GCV or NCV[b]	Energy industries						Manufacturing industries and construction			Other sectors						Other		
			Methods and EF used[c]		CO_2 IEF				Methods and EF used[d]		CO_2 IEF	Methods and EF used[e]		CO_2 IEF				Methods and EF used[f]		CO_2 IEF
			Methods	EF	Total	Public electricity and heat production	Petroleum refining	Manufacture of solid fuels and other energy industries	Methods	EF	Total	Methods	EF	Total	Commercial / Institutional	Residential	Agriculture / Forestry / Fishing	Methods	EF	Stationary
	%				(t/TJ)						(t/TJ)			(t/TJ)						(t/TJ)
Australia	7.52	GCV	T2	CS, PS	68	70	61	70	T2	CS	69	T2	CS	68	69	62	70	T1, T2	CS	NO
Austria	10.71	NCV	T1, T2	CS, D	76	75	76	NO	T1, T2, T3	CS, D	75	D, T1, T2, T3	CS, D	75	75	75	74	T1, T2	CS, D	NO
Belarus	16.09	NCV	T1	D	70	70	IE, NO	IE, NO	T1	D	68	T1	D	72	74	71	74	T1	D	71
Belgium	12.43	NCV	CS, T1, T3	D, PS	65	62	65	NO	CS, T1, T3	D, PS	74	CS, T1, T3	D	74	74	74	74	CS, T1, T3	D	NO
Bulgaria	5.14	NCV	T1, T2	CS, D	60	77	59	72.35	T1, T2	CS, D	87	T1, T2	CS, D	72	70	63	74			NO
Canada	10.83	GCV	T2	CS	61	77	64	56	T1, T2, T3	CS	70	T1, T2, T3	CS	68	66	69	70	T2, T3	CS	NO
Croatia	12.85	NCV	T1, T2	CS, D	67	75	67	NO	T1	D	85	T1	D	72	71	70	74			NO
Cyprus	48.04	NCV	CS, T1	CS, D	78	78	NO	NO	CS, T1	CS, D	82	T1	D	71	70	70	73	T1	D	74
Czechia	1.58	NCV	T1, T2	CS, D	57	62	55	74	T1, T2	CS, D	71	T1, T2	CS, D	73	69	66	74	T1	D	NO
Denmark (KP)	9.57	NCV	T1, T2, T3	CS, D, PS	58	76	56	74	CR, M, T1, T2, T3	CS, D, PS	81	CR, M, T1, T2, T3	CS, D	73	73	73	74	CR, M, T2	CS	NO
Denmark (Convention)	11.81	NCV	CS, T1, T2, T3	CS, D, PS	61	76	56	73	CR, M, T1, T2, T3	CS, D, PS	81	CR, M, T1, T2, T3	CS, D	74	73	73	74	CR, M, T1, T2	CS, D	NO
Estonia	3.08	NCV	T1, T2, T3	CS, D, PS	75	75	NO	IE, NO	T1, T2, T3	CS, D, PS	73	T1, T2	CS, D	72	73	69	73	T2	CS	NO
European Union (KP)	9.76				69	76	67	70			75			73	73	72	74			70
European Union (Convention)	9.73				69	76	67	70			75			73	73	72	74			70
Finland	15.89	NCV	T3	CS, D, PS	58	72	54	NO	T3	CS, D, PS	67	T1, T2, T3	CS, D	73	74	73	73	T2	CS	70
France (KP)	11.69	NCV	T2, T3	CS, PS	64	76	57	NO	T2, T3	CS, PS	76	T1, T2	CS, D	73	74	72	74			NO
France (Convention)	12.11	NCV	T2, T3	CS, PS	64	76	57	NO	T2, T3	CS, PS	76	T1, T2	CS, D	73	74	72	74			NO
Germany	9.77	NCV	CS	CS	77	83	77	74	CS, T1	CS, D	73	CS, T1, T2, T3	CS, D	74	73	74	74	CS, D, M	CS, D, M	74
Greece	17.29	NCV	T1, T2	D, PS	72	77	70	NO	T1, T2	CS, D, PS	82	T1, T2	CS, D	72	68	73	71	T1	D	NO
Hungary	6.04	NCV	T1, T2, T3	CS, D, PS	61	77	61	NO	T1, T2, T3	CS, D, PS	77	T1, T2	CS, D	72	71	64	74	T2	CS	NO
Iceland	14.24	NCV	T1	D	74	74	NO	NO	T1	D	74	T1, T2	D	75	70	67	75	T1	D	67
Ireland	10.96	NCV	T1, T3	CS, D, PS	78	76	79	73	T1, T2, T3	CS, D, PS	77	T1, T2	CS, D	72	73	71	73			IE, NO
Italy	10.33	NCV	T3	CS	72	76	72	NO	T2	CS	78	T2	CS	71	67	70	74	T2	CS	NO
Japan	15.29	GCV	CS, T2	CS	66	68	65	70	CS, T2	CS	67	CS, T2	CS	68	69	65	70			NO
Kazakhstan	5.86	NCV	T1	D	71	77	71	70	T1	D	75	T1	D	64	68	63	65	T1	D	73
Latvia	7.31	NCV	T1, T2	CS, D	75	76	NO	75	T1, T2	CS, D, PS	72	T1, T2	CS, D	73	72	71	75	T1	D	NO
Liechtenstein	19.56	NCV	T2	CS	NA, NO		NA, NO	NO	T1, T2	CS, D	74	T1, T2	CS, D	74	74	74	73			NO
Lithuania	9.11	NCV	T1, T2, T3	CS, D, PS	67	72	66	73	T1, T2, T3	CS, D, PS	72	T2	CS	71	71	69	72	T2	CS	NO
Luxembourg	10.04	NCV	T2	CS	74	74	NO	NO	T1, T2	CS, D, PS	74	T1, T2	CS, D	74	74	74	74	T1, T2	CS, D	NO
Malta	8.68	NCV	T2	CS	74	74	NO	NO	T1	D	71	T1	D	69	71	63	74	T1, T3	CS, D	NO
Monaco	19.80	NCV	T1, T2	CS, D	77	77	NO	NO	T1, T2	CS, D	75	T1, T2	CS, D	74	75	74	NO			NO
Netherlands	9.80	NCV	CS, T2	CS, D	66	58	67	NO	T2	CS, D	66	T1, T2	CS, D	72	73	71	72	T2	CS	NO
New Zealand	4.35	GCV	T2	CS	64	69	63	NO	T2	CS	68	T2	CS	67	65	61	69			NO
Norway	12.98	NCV	T1, T2, T3	CS, PS	61	57	51	75	T1, T2, T3	CS, PS	69	T1, T2	CS, PS	73	73	72	73	T1, T2	CS, D	74
Poland	3.93	NCV	T1, T2	CS, D	71	75	68	74	T1, T2	CS, D	69	T1, T2	CS, D	72	72	65	74			IE
Portugal	10.71	NCV	T1, T2, T3	CR, D, PS	60	77	53	NO	T1, T2, T3	CR, D, PS	75	T1, T2	CS, D	69	67	65	74	T1	D	NO
Romania	7.39	NCV	T1, T2	CS, D	68	78	63	71	T1, T2	CS, D	72	T1, T2	CS, D	68	69	65	69	T1, T2	CS, D	70
Russian Federation	7.29	NCV	T1, T2	CS, D	74	75	73	74	T1, T2, T3	CS, D	74	T1, T2	CS, D	66	77	63	74	T1, T2	CS, D	73
Slovakia	4.14	NCV	T2, T3	CS, PS	72	77	72	68	T2	CS	93	T1, T2	CS, D	73	69	63	74	T1, T2	CS, D	63
Slovenia	7.18	NCV	T1, T2	CS, D, PS	69	69	NO	NO	T1, T2, T3	CS, D, PS	76	T1, T2	CS, D	72	71	72	74	T1	D	NO
Spain	14.79	NCV	T1, T2, T3	CS, D, OTH, PS	64	78	55	74	T1, T2, T3	CS, D, M, OTH, PS	87	T1, T2, T3	CS, D, M, OTH	72	72	70	73	T1, T2	CS, D, M	IE, NO
Sweden	16.63	NCV	T2	CS	71	75	71	IE, NO	T1, T2	CS	71	T1, T2	CS	72	72	73	72			NO
Switzerland	21.35	NCV	T2, T3	CS	56	74	55		T2, T3	CS, PS	73	T1, T2, T3	CS, D	74	74	74	73	T2, T3	CS	NA
Turkey	6.04	NCV	T2, T3	CS, D, PS	72	77	72	NO	T1, T2	CS, D	94	T1, T2	CS, D	71	66	63	72			
Ukraine	0.53	NCV	T1, T2, T3	CS, D	74	77	74	71	T1, T2	CS, D	66	T1, T2, T3	CS, D	66	70	63	65	T1	D	NA
United Kingdom of Great Britain and Northern Ireland (KP)	9.02	NCV	T1, T2	CS, D	69	76	68	70	T1, T2, T3	CS, D	72	T1, T2, T3	CS, D	75	76	72	79	T1	CS	IE, NO
United Kingdom of Great Britain and Northern Ireland (Convention)	9.12	NCV	T1, T2	CS, D	69	76	68	70	T1, T2, T3	CS, D	72	T1, T2, T3	CS, D	73	76	72	75	T1	CS	IE, NO
United States of America	8.28	GCV	T2	CS	80	81	71	71	T2	CS	71	T2	CS, D	65	66	64	71	CS, T2	CS	27

Note: This table includes data from categories 1.A.1 Energy industries, 1.A.2 Manufacturing industries and construction, 1.A.4 Other sectors and 1.A.5. Other.

[a] The national total includes indirect CO_2 emissions from the atmospheric oxidation of CH_4, CO and NMVOCs for the following Parties: Canada, Czechia, Denmark (KP), Denmark (Convention), European Union (KP), European Union (Convention), Finland, Japan, Latvia, Netherlands, Portugal and Switzerland.

[b] The following Parties reported energy data on a gross calorific value (GCV) basis: Australia, Canada, Japan, New Zealand and United States of America. Hence, reported IEFs are about 5 per cent lower for liquid and solid fuels and biomass, and about 10 per cent lower for gaseous fuels than would have been the case if the data were given on a net calorific value (NCV) basis.

[c] Information on methods and emission factors in this table is as reported by Parties in table Summary 3 of the CRF. It may not reflect the actual method or type of emission factor used for all subcategories within the category 1.A.1 Energy industries.

[d] Information on methods and emission factors in this table is as reported by Parties in table Summary 3 of the CRF. It may not reflect the actual method or type of emission factor used for all subcategories within the category 1.A.2 Manufacturing industries and construction.

[e] Information on methods and emission factors in this table is as reported by Parties in table Summary 3 of the CRF. It may not reflect the actual method or type of emission factor used for all subcategories within the category 1.A.4 Other sectors.

[f] Information on methods and emission factors in this table is as reported by Parties in table Summary 3 of the CRF. It may not reflect the actual method or type of emission factor used for all subcategories within the category 1.A.5 Other.

Table 1.3

Stationary combustion: solid fuels - CO_2 (2018)

	Share of national total[a]	IEF in CRF based on GCV or NCV[b]	Energy industries						Manufacturing industries and construction			Other sectors						Other		
			Methods and EF used[c]		CO_2 IEF				Methods and EF used[d]		CO_2 IEF	Methods and EF used[e]		CO_2 IEF				Methods and EF used[f]		CO_2 IEF
			Methods	EF	Total	Public electricity and heat production	Petroleum refining	Manufacture of solid fuels and other energy industries	Methods	EF	Total	Methods	EF	Total	Commercial / Institutional	Residential	Agriculture / Forestry / Fishing	Methods	EF	Stationary
	%				(t/TJ)						(t/TJ)			(t/TJ)						(t/TJ)
Australia	28.68	GCV	T2	CS, PS	91	91	NO	77	T2	CS	82	T2	CS	93	93	95	NO	T1, T2	CS	NO
Austria	3.44	NCV	T1, T2	CS, D	92	92	NO	IE, NO	T1, T2, T3	CS, D	94	D, T1, T2, T3	CS, D	94	NO	94	95	T1, T2	CS, D	NO
Belarus	2.37	NCV	T1	D	98	98	IE, NO	IE, NO	T1	D	100	T1	D	98	98	98	98	T1	D	98
Belgium	6.15	NCV	CS, T1, T3	D, PS	221	257	NO	40	CS, T1, T3	D, PS	98	CS, T1, T3	D	95	95	95	95	CS, T1, T3	D	NO
Bulgaria	37.55	NCV	T1, T2	CS, D	101	101	NO	99	T1, T2	CS, D	91	T1, T2	CS, D	91	96	91	97			NO
Canada	6.65	GCV	T2	CS	92	92	NO	NO	T1, T2, T3	CS	69	T1, T2, T3	CS	96	NO	96	96	T2, T3	CS	NO
Croatia	6.05	NCV	T1, T2	CS, D	93	93	NO	NO	T1	D	99	T1	D	100	101	100	NO			NO
Cyprus	0.61	NCV	CS, T1	CS, D	NO	NO	NO	NO	CS, T1	CS, D	93	T1	D	NO	NO	NO	NO	T1	D	NO
Czechia	42.80	NCV	T1, T2	CS, D	97	98	NO	93	T1, T2	CS, D	92	T1, T2	CS, D	94	97	94	97	T1	D	NO
Denmark (KP)	13.19	NCV	T1, T2, T3	CS, D, PS	94	94	NO	NO	CR, M, T1, T2, T3	CS, D, PS	94	CR, M, T1, T2, T3	CS, D	94	NO	NO	94	CR, M, T2	CS	NO
Denmark (Convention)	12.73	NCV	CS, T1, T2, T3	CS, D, PS	94	94	NO	NO	CR, M, T1, T2, T3	CS, D, PS	94	CR, M, T1, T2, T3	CS, D	94	NO	NO	94	CR, M, T1, T2	CS, D	
Estonia	64.72	NCV	T1, T2, T3	CS, D, PS	68	103	NO	20	T1, T2, T3	CS, D, PS	97	T1, T2	CS, D	94	94	94	NO	T2	CS	NO
European Union (KP)	19.88				102	103	61	93			114			95	96	95	95			99
European Union (Convention)	19.91				102	103	61	93			114			95	96	95	95			99
Finland	15.83	NCV	T3	CS, D, PS	107	107	NO	97	T3	CS, D, PS	87	T1, T2, T3	CS, D	92	NO	88	92	T2	CS	NO
France (KP)	6.67	NCV	T2, T3	CS, PS	128	116	NO	204	T2, T3	CS, PS	126	T1, T2	CS, D	95	95	95	NO			NO
France (Convention)	7.07	NCV	T2, T3	CS, PS	128	116	NO	204	T2, T3	CS, PS	120	T1, T2	CS, D	95	95	95	NO			NO
Germany	32.15	NCV	CS	CS	105	104	41	144	CS, T1	CS, D	134	CS, T1, T2, T3	CS, D	98	98	98	98	CS, D, M	CS, D, M	99
Greece	25.76	NCV	T1, T2	D, PS	119	119	NO	NO	T1, T2	CS, D, PS	95	T1, T2	CS, D	99	IE, NO	99	99	T1	D	NO
Hungary	12.05	NCV	T1, T2, T3	CS, D, PS	115	118	NO	73	T1, T2, T3	CS, D, PS	86	T1, T2	CS, D	103	102	103	99	T2	CS	NO
Iceland	–	NCV	T1	D	NO	NO	NO	NO	T1	D	NA, NO	T1, T2	D	NO	NO	NO	NO	T1	D	NO
Ireland	4.84	NCV	T1, T3	CS, D, PS	93	93	NO	NO	T1, T2, T3	CS, D, PS	95	T1, T2	CS, D	97	NO	97	NO			IE, NO
Italy	8.73	NCV	T3	CS	101	94	NO	167	T2	CS	76	T2	CS	NO	NO	NO	NO	T2	CS	NO
Japan	35.13	GCV	CS, T2	CS	88	89	89	83	CS, T2	CS	93	CS, T2	CS	91	91	NO	109			NO
Kazakhstan	41.33	NCV	T1	D	96	96	96	96	T1	D	91	T1	D	96	96	96	96	T1	D	96
Latvia	1.62	NCV	T1, T2	CS, D	101	101	NO	NO	T1, T2	CS, D, PS	101	T1, T2	CS, D	101	101	101	NO	T1	D	NO
Liechtenstein	–	NCV	T2	CS	NA, NO		NA, NO	NO	T1, T2	CS, D	NA, NO	T1, T2	CS, D	NO		NO	NO			NO
Lithuania	3.43	NCV	T1, T2, T3	CS, D, PS	95	95	NO	NO	T1, T2, T3	CS, D, PS	97	T2	CS	95	95	95	95	T2	CS	NO
Luxembourg	1.46	NCV	T2	CS	NO	NO	NO	NO	T1, T2	CS, D, PS	95	T1, T2	CS, D	98	NO	98	NO	T1, T2	CS, D	NO
Malta	–	NCV	T2	CS	NO	NO	NO	NO	T1	D	NO	T1	D	NO	NO	NO	NO	T1, T3	CS, D	NO
Monaco	–	NCV	T1, T2	CS, D	NO	NO	NO	NO	T1, T2	CS, D	NO	T1, T2	CS, D	NO	NO	NO	NO			NO
Netherlands	17.17	NCV	CS, T2	CS, D	108	106	NO	143	T2	CS, D	55	T1, T2	CS, D	105	101	112	NO	T2	CS	NO
New Zealand	4.06	GCV	T2	CS	92	92	NO	NO	T2	CS	92	T2	CS	92	92	92	92			NO
Norway	1.40	NCV	T1, T2, T3	CS, PS	91	91	NO		T1, T2, T3	CS, PS	129	T1, T2	CS, PS	NO	NO	NO	NO	T1, T2	CS, D	
Poland	47.68	NCV	T1, T2	CS, D	100	102	95	49	T1, T2	CS, D	104	T1, T2	CS, D	94	95	94	94			IE
Portugal	15.09	NCV	T1, T2, T3	CR, D, PS	92	92	NO	NO	T1, T2, T3	CR, D, PS	95	T1, T2	CS, D	NO	NO	NO	NO	T1	D	NO
Romania	13.84	NCV	T1, T2	CS, D	86	86	NO	90	T1, T2	CS, D	93	T1, T2	CS, D	86	86	86	86	T1, T2	CS, D	NO
Russian Federation	13.08	NCV	T1, T2	CS, D	94	95		52	T1, T2, T3	CS, D	62	T1, T2	CS, D	95	95	95	96	T1, T2	CS, D	95
Slovakia	21.70	NCV	T2, T3	CS, PS	113	98	NO	196	T2	CS	121	T1, T2	CS, D	97	96	98	98	T1, T2	CS, D	100
Slovenia	26.72	NCV	T1, T2	CS, D, PS	102	102	NO	NO	T1, T2, T3	CS, D, PS	102	T1, T2	CS, D	96	NO	96	NO	T1	D	NO
Spain	13.25	NCV	T1, T2, T3	CS, D, OTH, PS	102	103	NO	43	T1, T2, T3	CS, D, M, OTH, PS	140	T1, T2, T3	CS, D, M, OTH	105	106	103	NO	T1, T2	CS, D, M	IE, NO
Sweden	8.95	NCV	T2	CS	163	188	NO	81	T1, T2	CS	114	T1, T2	CS	NO	NO	NO	NO			NO
Switzerland	0.87	NCV	T2, T3	CS	NO	NO	NO	NO	T2, T3	CS, PS	95	T1, T2, T3	CS, D	93	NO	93	NO	T2, T3	CS	NA
Turkey	28.88	NCV	T2, T3	CS, D, PS	103	102	NO	172	T1, T2	CS, D	97	T1, T2	CS, D	99	98	99	NO			
Ukraine	23.00	NCV	T1, T2, T3	CS, D	90	92	NA, NO	53	T1, T2	CS, D	80	T1, T2, T3	CS, D	93	89	95	95	T1	D	NA
United Kingdom of Great Britain and Northern Ireland (KP)	6.35	NCV	T1, T2	CS, D	93	92	NO	115	T1, T2, T3	CS, D	155	T1, T2, T3	CS, D	94	94	94	NO	T1	CS	IE, NO
United Kingdom of Great Britain and Northern Ireland (Convention)	6.34	NCV	T1, T2	CS, D	93	92	NO	115	T1, T2, T3	CS, D	155	T1, T2, T3	CS, D	94	94	94	NO	T1	CS	IE, NO
United States of America	18.30	GCV	T2	CS	91	91	NA, NO	91	T2	CS	91	T2	CS, D	91	91	NA, NO	NA, NO	CS, T2	CS	91

Note: This table includes data from categories 1.A.1 Energy industries, 1.A.2 Manufacturing industries and construction, 1.A.4 Other sectors and 1.A.5 Other.

[a] The national total includes indirect CO_2 emissions from the atmospheric oxidation of CH_4, CO and NMVOCs for the following Parties: Canada, Czechia, Denmark (KP), Denmark (Convention), European Union (KP), European Union (Convention), Finland, Japan, Latvia, Netherlands, Portugal and Switzerland.

[b] The following Parties reported energy data on a gross calorific value (GCV) basis: Australia, Canada, Japan, New Zealand and United States of America. Hence, reported IEFs are about 5 per cent lower for liquid and solid fuels and biomass, and about 10 per cent lower for gaseous fuels than would have been the case if the data were given on a net calorific value (NCV) basis.

[c] Information on methods and emission factors in this table is as reported by Parties in table Summary 3 of the CRF. It may not reflect the actual method or type of emission factor used for all subcategories within the category 1.A.1 Energy industries.

[d] Information on methods and emission factors in this table is as reported by Parties in table Summary 3 of the CRF. It may not reflect the actual method or type of emission factor used for all subcategories within the category 1.A.2 Manufacturing industries and construction.

[e] Information on methods and emission factors in this table is as reported by Parties in table Summary 3 of the CRF. It may not reflect the actual method or type of emission factor used for all subcategories within the category 1.A.4 Other sectors.

[f] Information on methods and emission factors in this table is as reported by Parties in table Summary 3 of the CRF. It may not reflect the actual method or type of emission factor used for all subcategories within the category 1.A.5 Other.

Table 1.4

Stationary combustion: gaseous fuels - CO_2 (2018)

	Share of national total[a]	IEF in CRF based on GCV or NCV[b]	Energy industries						Manufacturing industries and construction			Other sectors						Other		
			Methods and EF used[c]		CO_2 IEF				Methods and EF used[d]		CO_2 IEF	Methods and EF used[e]		CO_2 IEF				Methods and EF used[f]		CO_2 IEF
			Methods	EF	Total	Public electricity and heat production	Petroleum refining	Manufacture of solid fuels and other energy industries	Methods	EF	Total	Methods	EF	Total	Commercial / Institutional	Residential	Agriculture / Forestry / Fishing	Methods	EF	Stationary
	%				(t/TJ)						(t/TJ)			(t/TJ)						(t/TJ)
Australia	13.32	GCV	T2	CS, PS	51	51	49	51	T2	CS	51	T2	CS	51	51	51	51	T1, T2	CS	NO
Austria	20.29	NCV	T1, T2	CS, D	55	55	55	55	T1, T2, T3	CS, D	55	D, T1, T2, T3	CS, D	55	55	55	55	T1, T2	CS, D	NO
Belarus	36.79	NCV	T1	D	54	54	IE, NO	IE, NO	T1	D	54	T1	D	54	54	54	54	T1	D	54
Belgium	27.72	NCV	CS, T1, T3	D, PS	56	56	56	NO	CS, T1, T3	D, PS	56	CS, T1, T3	D	56	56	56	56	CS, T1, T3	D	NO
Bulgaria	7.38	NCV	T1, T2	CS, D	56	56	56	56	T1, T2	CS, D	56	T1, T2	CS, D	56	56	56	56			NO
Canada	29.63	GCV	T2	CS	50	49	48	51	T1, T2, T3	CS	49	T1, T2, T3	CS	49	49	49	49	T2, T3	CS	NO
Croatia	18.71	NCV	T1, T2	CS, D	56	55	56	56	T1	D	56	T1	D	56	56	56	56			NO
Cyprus		NCV	CS, T1	CS, D	NO	NO	NO	NO	CS, T1	CS, D	NO	T1	D		NO	NO	NO	T1	D	NO
Czechia	11.93	NCV	T1, T2	CS, D	55	55	55	55	T1, T2	CS, D	55	T1, T2	CS, D	55	55	55	55	T1	D	NO
Denmark (KP)	13.37	NCV	T1, T2, T3	CS, D, PS	57	57	57	58	CR, M, T1, T2, T3	CS, D, PS	57	CR, M, T1, T2, T3	CS, D	57	57	57	57	CR, M, T2	CS	NO
Denmark (Convention)	12.90	NCV	CS, T1, T2, T3	CS, D, PS	57	57	57	58	CR, M, T1, T2, T3	CS, D, PS	57	CR, M, T1, T2, T3	CS, D	57	57	57	57	CR, M, T1, T2	CS, D	
Estonia	4.37	NCV	T1, T2, T3	CS, D, PS	55	55	NO	IE, NO	T1, T2, T3	CS, D, PS	55	T1, T2	CS, D	55	55	55	NO	T2	CS	NO
European Union (KP)	20.44				57	56	56	59			56			56	56	56	56			56
European Union (Convention)	20.47				57	56	56	59			56			56	56	56	56			56
Finland	7.38	NCV	T3	CS, D, PS	55	55	55	NO	T3	CS, D, PS	55	T1, T2, T3	CS, D	55	55	55	55	T2	CS	55
France (KP)	18.02	NCV	T2, T3	CS, PS	56	56	56	NE, NO	T2, T3	CS, PS	56	T1, T2	CS, D	56	56	56	56			NO
France (Convention)	17.73	NCV	T2, T3	CS, PS	56	56	56	NE, NO	T2, T3	CS, PS	56	T1, T2	CS, D	56	56	56	56			NO
Germany	18.71	NCV	CS	CS	56	56	56	56	CS, T1	CS, D	56	CS, T1, T2, T3	CS, D	56	56	56	56	CS, D, M	CS, D, M	56
Greece	9.21	NCV	T1, T2	D, PS	56	56	IE, NO	60	T1, T2	CS, D, PS	56	T1, T2	CS, D	56	56	56	IE, NO	T1	D	NO
Hungary	28.44	NCV	T1, T2, T3	CS, D, PS	56	56	56	56	T1, T2, T3	CS, D, PS	56	T1, T2	CS, D	56	56	56	56	T2	CS	NO
Iceland		NCV	T1	D	NO	NO	NO	NO	T1	D	NO	T1, T2	D		NO	NO	NO	T1	D	NO
Ireland	16.94	NCV	T1, T3	CS, D, PS	55	56	7.6	56	T1, T2, T3	CS, D, PS	56	T1, T2	CS, D	56	56	56	NO			IE, NO
Italy	32.41	NCV	T3	CS	58	58	58	58	T2	CS	58	T2	CS	58	58	58	58	T2	CS	NO
Japan	18.63	GCV	CS, T2	CS	51	51	51	51	CS, T2	CS	51	CS, T2	CS	51	51	51	51			NO
Kazakhstan	17.08	NCV	T1	D	56	56	56	56	T1	D	56	T1	D	56	56	56	56	T1	D	56
Latvia	22.97	NCV	T1, T2	CS, D	56	56	NO	56	T1, T2	CS, D, PS	56	T1, T2	CS, D	56	56	56	56	T1	D	NO
Liechtenstein	27.18	NCV	T2	CS	56	56	NA, NO	NO	T1, T2	CS, D	56	T1, T2	CS, D	56	56	56	NO			NO
Lithuania	10.22	NCV	T1, T2, T3	CS, D, PS	56	56	56	56	T1, T2, T3	CS, D, PS	56	T2	CS	56	56	56	56	T2	CS	NO
Luxembourg	15.34	NCV	T2	CS	56	56	NO	NO	T1, T2	CS, D, PS	56	T1, T2	CS, D	56	56	56	56	T1, T2	CS, D	NO
Malta	31.14	NCV	T2	CS	56	56	NO	NO	T1	D	NO	T1	D		NO	NO	NO	T1, T3	CS, D	NO
Monaco	14.17	NCV	T1, T2	CS, D	56	56	NO	NO	T1, T2	CS, D	56	T1, T2	CS, D	56	56	56	NO			NO
Netherlands	35.39	NCV	CS, T2	CS, D	58	57	57	74	T2	CS, D	57	T1, T2	CS, D	57	57	57	57	T2	CS	NO
New Zealand	8.47	GCV	T2	CS	53	53	53	54	T2	CS	54	T2	CS	54	54	54	54			NO
Norway	23.79	NCV	T1, T2, T3	CS, PS	61	60	NO	61	T1, T2, T3	CS, PS	56	T1, T2	CS, PS	56	56	56	56	T1, T2	CS, D	NO
Poland	6.99	NCV	T1, T2	CS, D	55	55	55	55	T1, T2	CS, D	55	T1, T2	CS, D	55	55	55	55			IE
Portugal	16.47	NCV	T1, T2, T3	CR, D, PS	56	56	56	NO	T1, T2, T3	CR, D, PS	56	T1, T2	CS, D	56	56	56	56	T1	D	NO
Romania	18.47	NCV	T1, T2	CS, D	56	56	56	56	T1, T2	CS, D	56	T1, T2	CS, D	56	56	56	56	T1, T2	CS, D	NO
Russian Federation	32.53	NCV	T1, T2	CS, D	54	54	54	54	T1, T2, T3	CS, D	54	T1, T2	CS, D	54	54	54	54	T1, T2	CS, D	54
Slovakia	18.29	NCV	T2, T3	CS, PS	56	56	56	56	T2	CS	56	T1, T2	CS, D	56	56	56	56	T1, T2	CS, D	56
Slovenia	9.46	NCV	T1, T2	CS, D, PS	55	55	NO	55	T1, T2, T3	CS, D, PS	55	T1, T2	CS, D	55	55	55	NO	T1	D	NO
Spain	17.77	NCV	T1, T2, T3	CS, D, OTH, PS	56	56	57	56	T1, T2, T3	CS, D, M, OTH, PS	56	T1, T2, T3	CS, D, M, OTH	56	56	56	56	T1, T2	CS, D, M	IE, NO
Sweden	3.00	NCV	T2	CS	57	57	58	IE, NO	T1, T2	CS	57	T1, T2	CS	57	57	57	57			NO
Switzerland	14.11	NCV	T2, T3	CS	56	56	IE, NO		T2, T3	CS, PS	56	T1, T2, T3	CS, D	56	56	56	56	T2, T3	CS	
Turkey	17.81	NCV	T2, T3	CS, D, PS	56	56	52	NO	T1, T2	CS, D	55	T1, T2	CS, D	55	55	55	55			
Ukraine	18.20	NCV	T1, T2, T3	CS, D	56	56	56	58	T1, T2	CS, D	56	T1, T2, T3	CS, D	56	56	56	56	T1	D	
United Kingdom of Great Britain and Northern Ireland (KP)	34.25	NCV	T1, T2	CS, D	57	56	56	59	T1, T2, T3	CS, D	57	T1, T2, T3	CS, D	57	57	57	57	T1	CS	IE, NO
United Kingdom of Great Britain and Northern Ireland (Convention)	34.20	NCV	T1, T2	CS, D	57	56	56	59	T1, T2, T3	CS, D	57	T1, T2, T3	CS, D	57	57	57	57	T1	CS	IE, NO
United States of America	23.53	GCV	T2	CS	50	50	50	50	T2	CS	50	T2	CS, D	50	50	50	50	CS, T2	CS	22

Note: This table includes data from categories 1.A.1 Energy industries, 1.A.2 Manufacturing industries and construction, 1.A.4 Other sectors and 1.A.5 Other.

[a] The national total includes indirect CO_2 emissions from the atmospheric oxidation of CH_4, CO and NMVOCs for the following Parties: Canada, Czechia, Denmark (KP), Denmark (Convention), European Union (KP), European Union (Convention), Finland, Japan, Latvia, Netherlands, Portugal and Switzerland.

[b] The following Parties reported energy data on a gross calorific value (GCV) basis: Australia, Canada, Japan, New Zealand and United States of America. Hence, reported IEFs are about 5 per cent lower for liquid and solid fuels and biomass, and about 10 per cent lower for gaseous fuels than would have been the case if the data were given on a net calorific value (NCV) basis.

[c] Information on methods and emission factors in this table is as reported by Parties in table Summary 3 of the CRF. It may not reflect the actual method or type of emission factor used for all subcategories within the category 1.A.1 Energy industries.

[d] Information on methods and emission factors in this table is as reported by Parties in table Summary 3 of the CRF. It may not reflect the actual method or type of emission factor used for all subcategories within the category 1.A.2 Manufacturing industries and construction.

[e] Information on methods and emission factors in this table is as reported by Parties in table Summary 3 of the CRF. It may not reflect the actual method or type of emission factor used for all subcategories within the category 1.A.4 Other sectors.

[f] Information on methods and emission factors in this table is as reported by Parties in table Summary 3 of the CRF. It may not reflect the actual method or type of emission factor used for all subcategories within the category 1.A.5 Other.

Table 1.5

Stationary combustion: other fossil fuels - CO_2 (2018)

	Share of national total[a]	IEF in CRF based on GCV or NCV[b]	Energy industries						Manufacturing industries and construction			Other sectors						Other		
			Methods and EF used[c]		CO_2 IEF				Methods and EF used[d]		CO_2 IEF	Methods and EF used[e]		CO_2 IEF				Methods and EF used[f]		CO_2 IEF
			Methods	EF	Total	Public electricity and heat production	Petroleum refining	Manufacture of solid fuels and other energy industries	Methods	EF	Total	Methods	EF	Total	Commercial / Institutional	Residential	Agriculture / Forestry / Fishing	Methods	EF	Stationary
	%				(t/TJ)						(t/TJ)			(t/TJ)						(t/TJ)
Australia	0.00	GCV	T2	CS, PS	87	NO	NO	87	T2	CS	NO	T2	CS	NA, NO	NO	NO	NA, NO	T1, T2	CS	NO
Austria	2.50	NCV	T1, T2	CS, D	47	47	NO	NO	T1, T2, T3	CS, D	76	D, T1, T2, T3	CS, D	71	70	75	75	T1, T2	CS, D	NO
Belarus	–	NCV	T1	D	IE, NO	NO	IE, NO	IE, NO	T1	D	IE, NE, NO	T1	D	IE, NO	NO	NO	IE, NO	T1	D	NO
Belgium	2.32	NCV	CS, T1, T3	D, PS	105	101	249	NO	CS, T1, T3	D, PS	81	CS, T1, T3	D	66	66	NO	NO	CS, T1, T3	D	NO
Bulgaria	0.24	NCV	T1, T2	CS, D	NO	NO	NO	NO	T1, T2	CS, D	70	T1, T2	CS, D	NO	NO	NO	NO			NO
Canada	0.08	GCV	T2	CS	NO	NO	NO	NO	T1, T2, T3	CS	78	T1, T2, T3	CS	99	99	NO	NO	T2, T3	CS	NO
Croatia	0.49	NCV	T1, T2	CS, D	NO	NO	NO	NO	T1	D	143	T1	D	NO	NO	NO	NO			NO
Cyprus	1.09	NCV	CS, T1	CS, D	NO	NO	NO	NO	CS, T1	CS, D	100	T1	D	NO	NO	NO	NO	T1	D	NO
Czechia	0.48	NCV	T1, T2	CS, D	92	92	NO	NO	T1, T2	CS, D	80	T1, T2	CS, D	NO	NO	NO	NO	T1	D	NO
Denmark (KP)	3.67	NCV	T1, T2, T3	CS, D, PS	96	96	NO	NO	CR, M, T1, T2, T3	CS, D, PS	85	CR, M, T1, T2, T3	CS, D	NO	NO	NO	NO	CR, M, T2	CS	NO
Denmark (Convention)	3.59	NCV	CS, T1, T2, T3	CS, D, PS	96	96	NO	NO	CR, M, T1, T2, T3	CS, D, PS	85	CR, M, T1, T2, T3	CS, D	NO	NO	NO	NO	CR, M, T1, T2	CS, D	
Estonia	1.65	NCV	T1, T2, T3	CS, D, PS	62	62	NO	NO	T1, T2, T3	CS, D, PS	80	T1, T2	CS, D	NO	NO	NO	NO	T2	CS	NO
European Union (KP)	1.68				83	83	110	143			72			97	97	79	97			IE, NO
European Union (Convention)	1.69				83	83	110	143			72			97	97	79	97			IE, NO
Finland	1.77	NCV	T3	CS, D, PS	74	74	NO	NO	T3	CS, D, PS	83	T1, T2, T3	CS, D	NO	NO	NO	NO	T2	CS	NO
France (KP)	2.29	NCV	T2, T3	CS, PS	113	113	NO	NO	T2, T3	CS, PS	60	T1, T2	CS, D	74	75	73	74			NO
France (Convention)	2.26	NCV	T2, T3	CS, PS	113	113	NO	NO	T2, T3	CS, PS	60	T1, T2	CS, D	74	75	73	74			NO
Germany	2.29	NCV	CS	CS	85	85	NO	NO	CS, T1	CS, D	76	CS, T1, T2, T3	CS, D	IE, NO	IE, NO	IE, NO	IE, NO	CS, D, M	CS, D, M	NO
Greece	0.14	NCV	T1, T2	D, PS	NO	NO	NO	NO	T1, T2	CS, D, PS	89	T1, T2	CS, D	IE, NO	IE, NO	IE, NO	IE, NO	T1	D	NO
Hungary	1.00	NCV	T1, T2, T3	CS, D, PS	81	81	NO	NO	T1, T2, T3	CS, D, PS	81	T1, T2	CS, D	106	106	NO	NO	T2	CS	NO
Iceland	0.08	NCV	T1	D	NO	NO	NO	NO	T1	D	73	T1, T2	D	NO	NO	NO	NO	T1	D	NO
Ireland	1.31	NCV	T1, T3	CS, D, PS	196	196	NO	NO	T1, T2, T3	CS, D, PS	84	T1, T2	CS, D	NO	NO	NO	NO			IE, NO
Italy	1.52	NCV	T3	CS	96	96	NO	NO	T2	CS	80	T2	CS	98	98	NO	NO	T2	CS	NO
Japan	1.45	GCV	CS, T2	CS	46	IE, NO	47	46	CS, T2	CS	43	CS, T2	CS	30	30	NO	NO			NO
Kazakhstan	–	NCV	T1	D	NA	NA	NA	NA	T1	D	NA	T1	D	IE, NA	NA	NA	IE, NA	T1	D	NA
Latvia	1.14	NCV	T1, T2	CS, D	NO	NO	NO	NO	T1, T2	CS, D, PS	84	T1, T2	CS, D	73	73	NO	NO	T1	D	NO
Liechtenstein	0.02	NCV	T2	CS	NA, NO		NA, NO	NO	T1, T2	CS, D	NA, NO	T1, T2	CS, D	69		NO	69			NO
Lithuania	0.98	NCV	T1, T2, T3	CS, D, PS	124	124	NO	NO	T1, T2, T3	CS, D, PS	111	T2	CS	NO	NO	NO	NO	T2	CS	NO
Luxembourg	1.74	NCV	T2	CS	90	90	NO	NO	T1, T2	CS, D, PS	79	T1, T2	CS, D	73	NO	NO	73	T1, T2	CS, D	NO
Malta	–	NCV	T2	CS	NO	NO	NO	NO	T1	D	NO	T1	D	NO	NO	NO	NO	T1, T3	CS, D	NO
Monaco	24.32	NCV	T1, T2	CS, D	70	70	NO	NO	T1, T2	CS, D	75	T1, T2	CS, D	NO	NO	NO	NO			NO
Netherlands	1.52	NCV	CS, T2	CS, D	80	80	NO	NO	T2	CS, D	NO	T1, T2	CS, D	77	77	NO	77	T2	CS	NO
New Zealand	–	GCV	T2	CS	NO	NO	NO	NO	T2	CS	NO	T2	CS	NO	NO	NO	NO			NO
Norway	2.45	NCV	T1, T2, T3	CS, PS	50	50	NO	NO	T1, T2, T3	CS, PS	72	T1, T2	CS, PS	79	79		NO	T1, T2	CS, D	NO
Poland	1.26	NCV	T1, T2	CS, D	98	98	NO	143	T1, T2	CS, D	131	T1, T2	CS, D	120	120	IE, NO	NO			IE
Portugal	1.12	NCV	T1, T2, T3	CR, D, PS	119	119	NO	NO	T1, T2, T3	CR, D, PS	53	T1, T2	CS, D	NO	NO	NO	NO	T1	D	NO
Romania	0.94	NCV	T1, T2	CS, D	NO	NO	NO	NO	T1, T2	CS, D	91	T1, T2	CS, D	92	92	NO	NO	T1, T2	CS, D	NO
Russian Federation	1.71	NCV	T1, T2	CS, D	143	143	143	143	T1, T2, T3	CS, D	143	T1, T2	CS, D	143	143	143	143	T1, T2	CS, D	143
Slovakia	1.11	NCV	T2, T3	CS, PS	81	81	NO	NO	T2	CS	100	T1, T2	CS, D	NO	NO	NO	NO	T1, T2	CS, D	NO
Slovenia	0.80	NCV	T1, T2	CS, D, PS	73	73	NO	NO	T1, T2, T3	CS, D, PS	62	T1, T2	CS, D	NO	NO	NO	NO	T1	D	NO
Spain	0.68	NCV	T1, T2, T3	CS, D, OTH, PS	49	49	56	NO	T1, T2, T3	CS, D, M, OTH, PS	52	T1, T2, T3	CS, D, M, OTH	NO	NO	NO	NO	T1, T2	CS, D, M	NO
Sweden	5.43	NCV	T2	CS	90	90	NO	NO	T1, T2	CS	60	T1, T2	CS	NO	NO	NO	NO			NO
Switzerland	6.29	NCV	T2, T3	CS	89	89	NO		T2, T3	CS, PS	67	T1, T2, T3	CS, D	NO			NO	T2, T3	CS	NA
Turkey	0.42	NCV	T2, T3	CS, D, PS	142	142	NO	NO	T1, T2	CS, D	139	T1, T2	CS, D	NO	NO		NO			
Ukraine	0.68	NCV	T1, T2, T3	CS, D	73	73	NA, NO	73	T1, T2	CS, D	73	T1, T2, T3	CS, D	73	73	73	73	T1	D	NA
United Kingdom of Great Britain and Northern Ireland (KP)	1.39	NCV	T1, T2	CS, D	64	64	NO	NO	T1, T2, T3	CS, D	47	T1, T2, T3	CS, D	NO	NO		NO	T1	CS	IE, NO
United Kingdom of Great Britain and Northern Ireland (Convention)	1.39	NCV	T1, T2	CS, D	64	64	NO	NO	T1, T2, T3	CS, D	47	T1, T2, T3	CS, D	NO	NO	NO	NO	T1	CS	IE, NO
United States of America	0.17	GCV	T2	CS	7.0	7.0	NO	NO	T2	CS	NO	T2	CS, D	NO	NO	NO	NO	CS, T2	CS	46

Note: This table includes data from categories 1.A.1 Energy industries, 1.A.2 Manufacturing industries and construction, 1.A.4 Other sectors and 1.A.5 Other.

[a] The national total includes indirect CO_2 emissions from the atmospheric oxidation of CH_4, CO and NMVOCs for the following Parties: Canada, Czechia, Denmark (KP), Denmark (Convention), European Union (KP), European Union (Convention), Finland, Japan, Latvia, Netherlands, Portugal and Switzerland.

[b] The following Parties reported energy data on a gross calorific value (GCV) basis: Australia, Canada, Japan, New Zealand and United States of America. Hence, reported IEFs are about 5 per cent lower for liquid and solid fuels and biomass, and about 10 per cent lower for gaseous fuels than would have been the case if the data were given on a net calorific value (NCV) basis.

[c] Information on methods and emission factors in this table is as reported by Parties in table Summary 3 of the CRF. It may not reflect the actual method or type of emission factor used for all subcategories within the category 1.A.1 Energy industries.

[d] Information on methods and emission factors in this table is as reported by Parties in table Summary 3 of the CRF. It may not reflect the actual method or type of emission factor used for all subcategories within the category 1.A.2 Manufacturing industries and construction.

[e] Information on methods and emission factors in this table is as reported by Parties in table Summary 3 of the CRF. It may not reflect the actual method or type of emission factor used for all subcategories within the category 1.A.4 Other sectors.

[f] Information on methods and emission factors in this table is as reported by Parties in table Summary 3 of the CRF. It may not reflect the actual method or type of emission factor used for all subcategories within the category 1.A.5 Other.

Table 1.6

Road transportation - CO_2, N_2O (2018)

	CO_2 emissions						N_2O emissions					
	Share of national total[a]	Methods and EF used		CO_2 IEF			Share of national total[a]	Methods and EF used		N_2O IEF		
		Methods	EF	IEF in CRF based on GCV or NCV[b]	Gasoline	Diesel oil		Methods	EF	IEF in CRF based on GCV or NCV[b]	Gasoline	Diesel oil
	(%)				(t/TJ)		(%)				(kg/TJ)	
IPCC default EF[c]				**NCV**	**69.3 (67.5 to 73.0)**	**74.1 (72.6 to 74.8)**				**NCV**	**8.0 (0.96 to 24)**	**3.9 (1.3 to 12)**
Australia	15.05	T2	CS, D	GCV	67	70	0.18	T1, T3	CS, D	GCV	3.7	1.6
Austria	29.65	T1, T2	CS, D	NCV	77	74	0.32	T3	CS	NCV	0.54	3.1
Belarus	1.27	T1	D	NCV	69	74	0.02	T1	D	NCV	8.0	3.9
Belgium	21.16	M, T2	CS, M	NCV	72	74	0.23	M, T3	CS, M	NCV	0.54	3.0
Bulgaria	15.87	T2	CR	NCV	72	75	0.15	T2	CR	NCV	1.7	2.2
Canada	20.67	T1, T3	CS	GCV	69	70	0.36	T1, T3	CS	GCV	3.8	3.9
Croatia	25.69	T1	D	NCV	69	74	0.23	T1, T3	CR, D	NCV	1.4	2.4
Cyprus	23.24	T1, T2	D, M	NCV	72	74	0.14	T1, T2	D, M	NCV	1.1	1.9
Czechia	14.43	T2	M	NCV	72	74	0.14	T3	M	NCV	1.0	2.6
Denmark (KP)	25.52	CR, M, T2	CS	NCV	73	74	0.27	CR, M, T3	CR	NCV	0.72	3.4
Denmark (Convention)	24.91	CR, M, T1, T2	CS, D	NCV	73	74	0.27	CR, M, T1, T3	CR, D	NCV	0.75	3.4
Estonia	11.68	T1, T2	CS, D	NCV	71	73	0.10	T1, T3	CS, D	NCV	0.96	2.8
European Union (KP)	21.02				73	74	0.22				0.87	3.0
European Union (Convention)	21.02				73	74	0.22				0.87	3.0
Finland	19.24	T2	CS	NCV	71	73	0.14	T3	CR	NCV	0.78	2.1
France (KP)	27.70	T3	M	NCV	72	75	0.33	T3	M	NCV	1.1	3.1
France (Convention)	27.47	T3	M	NCV	74	75	0.33	T3	M	NCV	1.2	3.1
Germany	18.15	CS, M, T2, T3	CS, D	NCV	75	74	0.20	CS, M, T2, T3	CS, M	NCV	0.49	3.6
Greece	15.82	T1, T2, T3	CS, D	NCV	73	73	0.13	M, T1	D, M	NCV	1.7	2.3
Hungary	21.27	T1, T2	CS, D	NCV	71	74	0.21	T1, T3	D, M	NCV	1.3	2.8
Iceland	19.96	T1	D	NCV	72	73	0.16	T3	D	NCV	0.99	2.4
Ireland	18.96	T2, T3	CS, M	NCV	70	73	0.19	T3	M	NCV	0.83	2.7
Italy	22.41	T2	CS, M	NCV	73	74	0.21	T3	M	NCV	1.1	2.7
Japan	14.62	T2	CS	GCV	68	69	0.12	T3	CS, D	GCV	1.0	3.2
Kazakhstan	5.38	T1	D	NCV	69	74	0.08	T1	D	NCV	3.2	5.7
Latvia	26.50	T1, T2	CS, D	NCV	71	75	0.25	T1, T2	CR, D, M	NCV	0.87	2.6
Liechtenstein	32.51	T2	CS	NCV	74	73	0.20	T2	CS, D	NCV	0.36	2.3
Lithuania	28.40	T1, T2	CS, D	NCV	70	73	0.35	T1, T3	CR, D	NCV	2.1	3.3
Luxembourg	56.44	T1, T2	CS, D	NCV	73	74	0.60	T3	M	NCV	0.40	2.9
Malta	25.56	T1, T3	M	NCV	72	72	0.23	T1, T3	M	NCV	2.1	2.2
Monaco	25.41	T2	CS	NCV	72	74	0.45	T2	CS, D	NCV	3.9	3.9
Netherlands	15.93	T1, T2	CS	NCV	73	72	0.13	T1, T2	CS	NCV	0.74	2.8
New Zealand	18.97	T2	CS	GCV	67	69	0.12	T3	CS	GCV	1.6	1.3
Norway	17.16	T2	CS	NCV	71	74	0.15	T2	CS	NCV	0.58	2.2
Poland	15.27	T2	D	NCV	72	74	0.16	T3	D	NCV	1.7	2.7
Portugal	24.14	T2	OTH	NCV	72	74	0.22	OTH, T3	OTH	NCV	1.7	2.2
Romania	15.16	T1, T3	D, OTH	NCV	72	77	0.16	T1, T3	D, OTH	NCV	1.6	2.8
Russian Federation	7.19	T1, T2	CS, D	NCV	73	74	0.05	T1, T2, T3	CS, D	NCV	1.7	1.8
Slovakia	16.74	T2	CS, D	NCV	70	74	0.19	T3	D	NCV	1.0	2.9
Slovenia	32.67	M	M	NCV	69	74	0.39	M	M	NCV	0.28	3.3
Spain	24.73	T1, T2	CS, D, M	NCV	73	73	0.27	T3	M	NCV	0.88	3.1
Sweden	28.64	T2	CS		72	72	0.27	M, T1, T2	CS, D		0.43	3.5
Switzerland	31.20	T2	CS	NCV	74	73	0.26	T3	CS	NCV	0.67	3.2
Turkey	14.84	T1, T2	CS, D	NCV	69	72	0.24	T1	D	NCV	8.0	3.9
Ukraine	7.10	T1, T2	CS, D	NCV	72	74	0.12	T1	D	NCV	5.6	3.9
United Kingdom of Great Britain and Northern Ireland (KP)	24.09	OTH, T1, T3	CS, OTH	NCV	70	74	0.24	T3	CR, CS	NCV	0.60	3.3
United Kingdom of Great Britain and Northern Ireland (Convention)	24.06	OTH, T1, T3	CS, OTH	NCV	70	74	0.24	T3	CR, CS	NCV	0.60	3.3
United States of America	22.78	CS, T1, T2	CS	GCV	68	70	0.16	M, T1, T2	CS, D, M	GCV	1.5	1.6

[a] The national total includes indirect CO_2 emissions from the atmospheric oxidation of CH_4, CO and NMVOCs for the following Parties: Canada, Czechia, Denmark (KP), Denmark (Convention), European Union (KP), European Union (Convention), Finland, Japan, Latvia, Netherlands, Portugal and Switzerland.

[b] The following Parties reported energy data on a gross calorific value (GCV) basis: Australia, Canada, Japan, New Zealand and United States of America. Hence, reported IEFs are about 5 per cent lower for liquid and solid fuels and biomass, and about 10 per cent lower for gaseous fuels than would have been the case if the data were given on a net calorific value (NCV) basis.

[c] Source of default emission factors: 2006 IPCC Guidelines for National Greenhouse Gas Inventories Volume 2 Chapter 3 Mobile Combustion. CO_2 table 3.2.1; N_2O table 3.2.2.

Table 1.7

Domestic aviation and navigation - CO_2 (2018)

	Methods and EF used		Domestic aviation			Domestic navigation		
			Share of national total[a]	CO_2 IEF		Share of national total[a]	CO_2 IEF	
	Methods	EF		Jet kerosene	Aviation gasoline		Residual fuel oil	Gas/diesel oil
			(%)	(t/TJ)		(%)	(t/TJ)	
IPCC default EF[b]				71.5 (69.8 to 74.4)	70 (67.5 to 73.0)		77.4 (75.5 to 78.8)	74.1 (72.6 to 74.8)
Australia	T2	CS	1.61	70	67	0.29	74	70
Austria	T1, T2, T3	CS, D	0.06	73	75	0.01	NO	74
Belarus	T1	D	0.01	72	NO	0.67	NA	74
Belgium	T1, T3	CS, D	0.02	72	72	0.34	IE	69
Bulgaria	T1, T2	D	0.09	72	69	0.01	NO	74
Canada	T2, T3	CS	1.07	68	71	0.51	74	70
Croatia	T1	D	0.13	72	70	0.63	NO	74
Cyprus	T1	D	0.01	72	NO	0.02	NO	74
Czechia	T1	D	0.01	71	70	0.01	NO	74
Denmark (KP)	CR, M, T2	CS	0.28	72	73	1.29	78	74
Denmark (Convention)	CR, M, T1, T2	CS, D	0.37	72	73	1.41	78	74
Estonia	T2	CS, D	0.02	NO	71	0.08	NO	73
European Union (KP)			0.39	72	70	0.51	78	74
European Union (Convention)			0.39	72	70	0.51	78	74
Finland	T1, T2	CS	0.38	73	71	0.74	78	73
France (KP)	T1, T3	CS, M	1.17	72	71	0.29	78	75
France (Convention)	T1, T3	CS, M	1.17	72	71	0.32	78	75
Germany	CS, T1, T2	CS, D, M	0.23	73	70	0.20	80	74
Greece	T1, T2, T3	CS, D	0.46	71	69	2.17	78	77
Hungary	T1, T2	CS, D	0.01	73	70	0.03	NO	74
Iceland	T1	D	0.51	72	70	0.89	77	74
Ireland	M, T2, T3	CS	0.03	71	71	0.42	NO	73
Italy	T1, T2	CS	0.54	72	70	0.95	77	74
Japan	T2	CS	0.85	68	68	0.85	IE	69
Kazakhstan	T1, T2	CS, D	0.27	72	69	0.00	NO	74
Latvia	T1, T2	CS, D	0.03	72	70	0.17	NO	75
Liechtenstein	T1	CS	0.02	73	NO	–	NO	NO
Lithuania	T1	CS	0.01	72	71	0.07	NO	73
Luxembourg	T1, T2	CS, D	0.01	NO	70	0.01	NO	74
Malta	T1, T3	CS, D, M	0.03	72	70	4.22	NO	74
Monaco	T1	CS, D	0.66	71	NO	1.31	NO	75
Netherlands	T1, T2	CS, D	0.02	72	72	0.52	NO	72
New Zealand	T2	CS	1.40	68	66	0.34	73	NO
Norway	T1, T2	CS, D, PS	2.27	73	71	4.98	NO	74
Poland	T1	D	0.03	72	70	0.00	NO	74
Portugal	T1, T2, T3	D	0.74	71	70	0.39	77	74
Romania	T1, T2	CS, D, OTH	0.14	72	70	0.11	NO	70
Russian Federation	T1, T1b	D	0.57	71	IE	0.11	77	74
Slovakia	T1, T3	D	0.01	73	70	0.01	NO	74
Slovenia	T1	D	0.01	72	70	–	NO	IE
Spain	T1, T3	D	0.91	73	71	0.94	77	74
Sweden	T1, T2	CS, D	1.01	72	70	1.40	78	73
Switzerland	T3	CS	0.25	73	IE	0.24	NO	73
Turkey	T2	CS, D	0.70	70	NO	0.18	77	72
Ukraine	T1, T2, T3	CS, D, OTH	0.05	72	70	0.02	77	74
United Kingdom of Great Britain and Northern Ireland (KP)	T2, T3	CS	0.37	72	70	1.16	76	75
United Kingdom of Great Britain and Northern Ireland (Convention)	T2, T3	CS	0.39	72	70	1.16	76	75
United States of America	T1, T2	CS	2.41	68	66	0.49	71	69

[a] The national total includes indirect CO_2 emissions from the atmospheric oxidation of CH_4, CO and NMVOCs for the following Parties: Canada, Czechia, Denmark (KP), Denmark (Convention), European Union (KP), European Union (Convention), Finland, Japan, Latvia, Netherlands, Portugal and Switzerland.

[b] Source of default emission factors: 2006 IPCC Guidelines for National Greenhouse Gas Inventories Volume 2 Chapter 3 Mobile Combustion. Table 3.6.4 for Jet kerosense, Aviation gasoline; table 3.5.2 for Residual oil Gas/diesel oil.

Table 1.8

Domestic and international aviation - activity data (2018)

	Domestic aviation						International aviation						Total jet kerosene and aviation gasoline		
	Jet kerosene			Aviation gasoline			Jet kerosene			Aviation gasoline					
	CRF	IEA[a, b, d]	Difference	CRF	IEA[a, c, d]	Difference	CRF	IEA[a, b, d]	Difference	CRF	IEA[a, c, d]	Difference	CRF	IEA[a, b, c, d]	Difference
	(TJ)		(%)	(TJ)		(%)	(TJ)		(%)	(TJ)		(%)	(TJ)		(%)
Australia	128 286	130 925	2.06	1 065	2 088	96.03	208 024	199 506	-4.09	NO	0	–	337 375	332 518	-1.44
Austria	535	1 199	124.09	95	101	6.84	34 777	34 536	-0.69	NO	0	–	35 407	35 836	1.21
Belarus	121	774	537.29	NO	0	–	7 023	6 192	-11.83	NO	0	–	7 144	6 966	-2.49
Belgium	244	77	-68.34	22	26	17.58	71 947	70 584	-1.89	3.1	0	–	72 217	70 688	-2.12
Bulgaria	717	715	-0.28	17	17	0.00	10 721	10 691	-0.28	NO	0	–	11 454	11 423	-0.28
Canada	112 557	280 980	149.63	1 745	1 568	-10.13	220 971	37 375	-83.09	48	0	–	335 321	319 923	-4.59
Croatia	426	417	-2.18	18	22	23.36	7 715	7 547	-2.18	4.5	0	–	8 164	7 986	-2.18
Cyprus	12.4	76	511.39	NO	0	–	14 505	13 254	-8.62	NO	0	–	14 517	13 330	-8.18
Czechia	11	1 290	11 915.53	131	132	0.48	17 309	17 028	-1.62	NO	0	–	17 451	18 450	5.72
Denmark (KP)	1 800		–	49		–	42 297		–	NO		–	44 146	0	–
Denmark (Convention)	2 476	1 140	-53.98	55	49	-9.88	42 307	42 450	0.34	NO	0	–	44 838	43 639	-2.67
Estonia	NO	56	–	57	0	–	2 906	2 906	-0.02	NO	0	–	2 963	2 962	-0.06
European Union (KP)	228 064	292 558	28.28	2 912	2 012	-30.90	2 299 012	2 063 194	-10.26	70	495	606.17	2 530 058	2358258.8	-6.79
European Union (Convention)	225 127	298 377	32.54	2 866	2 456	-14.32	2 280 649	2 194 986	-3.76	72	496	585.74	2 508 714	2 496 314	-0.49
Finland	2 916	2 881	-1.19	29	44	50.01	32 627	32 379	-0.76	NO	0	–	35 572	35 304	-0.75
France (KP)	72 156		–	783		–	248 984		–	NO		–	321 922	0	–
France (Convention)	73 130	70 352	-3.80	783	748	-4.42	251 971	242 937	-3.59	NO	0	–	325 884	314 037	-3.64
Germany	26 833	27 004	0.64	389	396	1.80	410 370	413 273	0.71	NO	0	–	437 592	440 673	0.70
Greece	5 814	9 216	58.50	86	86	-0.23	54 012	45 599	-15.58	NO	7.0	–	59 912	54 907	-8.35
Hungary	21	0	–	42	0	–	11 550	11 481	-0.60	2.6	0	–	11 615	11 481	-1.16
Iceland	329	320	-2.49	15	15	-0.67	18 079	17 524	-3.07	NO	0	–	18 424	17 860	-3.06
Ireland	206	219	6.56	28	0	–	45 936	44 772	-2.53	NO	0	–	46 169	44 991	-2.55
Italy	32 272	36 597	13.40	151	220	45.43	162 874	160 558	-1.42	NO	0	–	195 297	197 375	1.06
Japan	154 321	147 938	-4.14	85	84	-0.96	317 531	304 399	-4.14	NO	0	–	471 937	452 422	-4.14
Kazakhstan	12 823	5 035	-60.73	2 269	175	-92.29	7 466	25 852	246.24	NO	0	–	22 558	31 062	37.70
Latvia	45	10.0	-77.83	6.0	5.9	-1.75	6 417	6 386	-0.49	NO	0	–	6 468	6 402	-1.03
Liechtenstein	0.40		–	NO		–	15		–	NO		–	15	0	–
Lithuania	6.0	4.3	-28.34	22	22	0.01	5 274	5 242	-0.61	NO	0	–	5 302	5 268	-0.64
Luxembourg	NO	0	–	8.1	10	28.18	25 728	25 666	-0.24	0.90	0	–	25 737	25 676	-0.24
Malta	9.7	28	182.74	0.41	1.6	301.01	6 596	6 564	-0.48	0.27	0.57	114.08	6 606	6 594	-0.18
Monaco	8.0		–	NO		–	35		–	NO		–	43	0	–
Netherlands	414	410	-1.15	35	35	0.01	170 046	168 091	-1.15	NO	0	–	170 495	168 536	-1.15
New Zealand	15 821	14 640	-7.46	410	401	-2.19	57 145	54 424	-4.76	NO	0	–	73 377	69 465	-5.33
Norway	16 013	15 996	-0.10	117	132	12.99	23 517	23 478	-0.17	23	44	90.23	39 670	39 650	-0.05
Poland	1 702	1 199	-29.53	176	176	-0.01	41 629	42 133	1.21	NO	0	–	43 507	43 508	0.00
Portugal	6 956	7 457	7.20	11	35	223.83	57 601	57 103	-0.87	24	0	–	64 592	64 595	0.00
Romania	2 278	2 025	-11.12	47	47	0.11	5 751	5 112	-11.12	NO	0	–	8 076	7 184	-11.05
Russian Federation	175 563	238 521	35.86	IE	88	–	149 560	238 521	59.48	NO	0	–	325 123	477 130	46.75
Slovakia	37	0	–	2.3	0	–	2 528	1 978	-21.75	1.9	0	–	2 569	1 978	-23.00
Slovenia	8.3	0	–	21	21	1.06	1 418	1 470	3.65	NO	0	–	1 447	1 491	3.02
Spain	41 415	91 676	121.36	146	176	20.43	244 173	194 833	-20.21	31	0	–	285 765	286 685	0.32
Sweden	7 266	7 362	1.32	47	47	1.11	38 996	39 250	0.65	NO	0	–	46 309	46 659	0.76
Switzerland	1 579	2 583	63.55	IE	134	–	77 214	77 198	-0.02	IE	0	–	78 793	79 915	1.42
Turkey	52 217	53 277	2.03	NO	0	–	167 911	159 014	-5.30	NO	0	–	220 128	212 291	-3.56
Ukraine	1 427	0	–	995	0	–	21 482	0	–	NO	0	–	23 903	0	–
United Kingdom of Great Britain and Northern Ireland (KP)	23 636		–	478		–	506 246		–	1.9		–	530 362	0	–
United Kingdom of Great Britain and Northern Ireland (Convention)	24 967	36 969	48.07	478	37	-92.31	506 438	491 163	-3.02	1.9	488	25 417.39	531 884	528 657	-0.61
United States of America	2 343 850	2 460 625	4.98	23 592	20 787	-11.89	1 209 889	1 054 262	-12.86	NA	0	–	3 577 331	3 535 674	-1.16

[a] Based on IEA data from the IEA (2020) World energy balances data service, www.iea.org/data-and-statistics as of 19 June 2020.

[b] UNFCCC has included the quantities reported in IEA for 'kerosene type jet fuel' and 'gasoline type jet fuel'.

[c] UNFCCC has included the quantities reported in IEA for 'aviation gasoline' and 'motor gasoline'.

[d] Geographical coverage of IEA data:

IEA data for Denmark do not include Faroe Islands and Greenland.

IEA data for France includes data for Monaco, but excludes data for the following overseas territories: Guadeloupe, Guyana, Martinique, New Caledonia, French Polynesia, Reunion and Saint Pierre Miquelon.

No IEA data for Liechtenstein are available. These data are not included in the data of Switzerland.

IEA data for the Netherlands are only for the European part.

Table 1.9

Domestic and international navigation - activity data (2018)

	Domestic Navigation						International Navigation						Total					
	Residual fuel oil			Gas / diesel oil			Residual fuel oil			Gas / diesel oil			Residual fuel oil			Gas / diesel oil		
	CRF	IEA[a, b]	Difference	CRF	IEA[a, b]	Difference	CRF	IEA[a, b]	Difference	CRF	IEA[a, b]	Difference	CRF	IEA[a, b]	Difference	CRF	IEA[a, b]	Difference
	(TJ)		(%)	(TJ)		(%)	(TJ)		(%)	(TJ)		(%)	(TJ)		(%)	(TJ)		(%)
Australia	2 267	2 251	-0.70	7 706	10 446	35.54	21 620	21 469	-0.70	2 464	2 302	-6.58	23 887	23 720	-0.70	10 171	12 748	25.34
Austria	NO	0	–	38	67	75.79	NO	0	–	594	570	-4.04	NO	0	–	633	638	0.80
Belarus	NA	0	–	8 303	43	-99.49	NO	0	–	NO	0	–	NA	0	–	8 303	43	-99.49
Belgium	IE	32	–	5 822	5 823	0.02	338 110	333 080	-1.49	55 323	55 197	-0.23	338 110	333 112	-1.48	61 145	61 020	-0.20
Bulgaria	NO	0	–	88	0	–	1 012	1 012	0.00	2 410	2 444	1.41	1 012	1 012	0.00	2 498	2 444	-2.18
Canada	4 693	18 090	285.43	48 470	28 244	-41.73	33 376	15 196	-54.47	37 374	3 621	-90.31	38 070	33 286	-12.57	85 843	31 865	-62.88
Croatia	NO	0	–	2 016	2 011	-0.26	181	180	-0.47	692	690	-0.26	181	180	-0.47	2 708	2 701	-0.26
Cyprus	NO	0	–	29	29	-0.93	6 226	6 165	-0.99	5 064	5 017	-0.93	6 226	6 165	-0.99	5 093	5 046	-0.93
Czechia	NO	0	–	129	128	-0.83	NO	0	–	NO	0	–	NO	0	–	129	128	-0.83
Denmark (KP)	1 513		–	6 735		–	7 457		–	15 379		–	8 970	0	–	22 113	0	–
Denmark (Convention)	1 619	4.5	-99.72	7 635	6 371	-16.54	7 615	8 823	15.86	16 946	15 773	-6.93	9 234	8 827	-4.40	24 581	22 144	-9.91
Estonia	NO	0	–	212	274	29.07	5 621	5 600	-0.37	6 641	6 688	0.71	5 621	5 600	-0.37	6 853	6 962	1.59
European Union (KP)	76 198	58 611	-23.08	188 008	135 925	-27.70	1 523 878	1 353 061	-11.21	398 410	384 793	-3.42	1 600 076	1 411 672	-11.77	586 418	520 718	-11.20
European Union (Convention)	75 663	58 611	-22.54	186 927	141 298	-24.41	1 522 575	1 459 390	-4.15	396 864	429 714	8.28	1 598 238	1 518 001	-5.02	583 790	571 013	-2.19
Finland	431	440	2.03	3 526	3 451	-2.14	10 918	11 040	1.12	2 127	2 428	14.15	11 349	11 480	1.16	5 653	5 879	3.99
France (KP)	722		–	4 938		–	73 217		–	7 783		–	73 939	0	–	12 721	0	–
France (Convention)	1 140	1 844	61.70	6 787	8 058	18.72	74 785	72 292	-3.33	7 833	4 043	-48.38	75 925	74 136	-2.36	14 620	12 101	-17.23
Germany	282.7	0	–	22 492	10 607	-52.84	39 287	39 240	-0.12	15 419	31 268	102.80	39 570	39 240	-0.83	37 911	41 876	10.46
Greece	14 633	14 265	-2.51	11 097	11 496	3.60	77 835	77 423	-0.53	13 282	13 760	3.60	92 468	91 689	-0.84	24 379	25 256	3.60
Hungary	NO	0	–	214	213	-0.30	NE	0	–	NE	0	–	NO	0	–	214	213	-0.30
Iceland	210	208	-0.99	365	360	-1.39	1 375	1 362	-0.99	1 825	1 792	-1.82	1 586	1 570	-0.99	2 191	2 152	-1.75
Ireland	NO	0	–	3 513	3 456	-1.64	659	639	-3.00	6 130	6 030	-1.64	659	639	-3.00	9 644	9 486	-1.64
Italy	22 879	14 416	-36.99	26 489	11 987	-54.75	75 376	92 089	22.17	333	20 543	6 060.10	98 255	106 505	8.40	26 822	32 530	21.28
Japan	IE	90 668	–	5 907	40 869	591.82	IE	180 494	–	1 022	6 152	501.84	IE	271 161	–	6 930	47 020	578.54
Kazakhstan	NO	0	–	125	0	–	NO	0	–	71	64	-9.83	NO	0	–	196	64	-67.21
Latvia	NO	0	–	270	226	-16.36	72	71	-1.11	1 531	1 535	0.24	72	71	-1.11	1 801	1 760	-2.25
Liechtenstein	NO		–	NO		–	NO		–	NO		–	NO	0	–	NO	0	–
Lithuania	NO	0	–	202	200	-0.88	4 802	4 892	1.87	3 567	3 549	-0.52	4 802	4 892	1.87	3 769	3 749	-0.54
Luxembourg	NO	0	–	13	0	–	NO	0	–	1.8	0	–	NO	0	–	15	0	–
Malta	NO	0	–	1 215	513	-57.76	77 684	76 915	-0.99	15 494	15 350	-0.93	77 684	76 915	-0.99	16 709	15 863	-5.06
Monaco	NO		–	12		–	NO		–	123		–	NO	0	–	134	0	–
Netherlands	NO	0	–	12 726	12 492	-1.84	377 717	368 504	-2.44	86 442	84 438	-2.32	377 717	368 504	-2.44	99 169	96 930	-2.26
New Zealand	3 619	1 448	-59.97	NO	2 556	–	11 747	11 545	-1.73	1 539	1 448	-5.88	15 366	12 993	-15.44	1 539	4 004	160.22
Norway	NO	0	–	32 283	25 645	-20.56	1 218	1 200	-1.47	6 443	5 666	-12.07	1 218	1 200	-1.47	38 726	31 311	-19.15
Poland	NO	0	–	155	84	-45.63	3 166	3 102	-2.01	8 137	8 062	-0.93	3 166	3 102	-2.01	8 292	8 146	-1.76
Portugal	2 452	2 603	6.15	986	1 585	60.70	28 100	27 949	-0.54	6 526	5 817	-10.87	30 552	30 552	0.00	7 512	7 402	-1.47
Romania	NO	0	–	1 721	1 696	-1.45	NO	0	–	772	761	-1.45	NO	0	–	2 493	2 457	-1.45
Russian Federation	7 075	7 048	-0.38	9 812	9 836	0.24	361 929	81 400	-77.51	105 989	410 866	287.65	369 004	88 448	-76.03	115 802	420 703	263.30
Slovakia	NO	0	–	34	0	–	NO	0	–	147	0	–	NO	0	–	181	0	–
Slovenia	NO	0	–	IE	0	–	8 611	8 393	-2.53	NO	827	–	8 611	8 393	-2.53	IE	827	–
Spain	20 615	20 360	-1.23	20 689	20 704	0.07	225 626	237 040	5.06	53 060	53 207	0.28	246 240	257 400	4.53	73 748	73 911	0.22
Sweden	5 045	4 646	-7.92	2 739	2 077	-24.16	90 327	52 640	-41.72	18 046	22 280	23.46	95 372	57 286	-39.93	20 785	24 357	17.19
Switzerland	NO	0	–	1 010	654	-35.24	NO	0	–	256	115	-55.18	NO	0	–	1 266	769	-39.28
Turkey	1 384	1 360	-1.74	11 266	14 867	31.97	36 620	33 800	-7.70	3 899	3834	-1.68	38 004	35 160	-7.48	15 165	18 701	23.32
Ukraine	18	40	124.3	994	1 576	58.58	12	0	–	692	0	–	30	40	32.20	1 686	1 576	-6.53
United Kingdom of Great Britain and Northern Ireland (KP)	7 415		–	59 554		–	70 501		–	71 684		–	77 915	0	–	131 238	0	–
United Kingdom of Great Britain and Northern Ireland (Convention)	7 422	0	–	59 554	37 751	-36.61	70 498	32 302	-54.18	71 684	69 438	-3.13	77 921	32 302	-58.54	131 238	107 189	-18.33
United States of America	195 015	33 551	-82.80	278 194	145 693	-47.63	440 556	613 482	39.25	141 851	296 755	109.20	635 571	647 033	1.80	420 044	442 448	5.33

[a] Based on IEA data from the IEA (2020) World energy balances data service, www.iea.org/data-and-statistics as of 19 June 2020.

[b] Geographical coverage of IEA data:

IEA data for Denmark does not include Faroe Islands and Greenland.

IEA data for France includes data for Monaco, but excludes data for the following overseas territories: Guadeloupe, Guyana, Martinique, New Caledonia, French Polynesia, Reunion and Saint Pierre Miquelon.

No IEA data for Liechtenstein are available. These data are not included in the data of Switzerland.

IEA data for the Netherlands are only for the European part.

Table 1.10

Fugitive emissions from fuels: coal mining and handling - CH_4 (2018)

	Share of national total[a]	Methods and EF used		Activity data					CH_4 IEF			
				CRF			IEA[b]		Underground mines		Surface mines	
		Methods	EF	Underground mines	Surface mines	Total	Total	Difference	Mining activities	Post-mining activities	Mining activities	Post-mining activities
	(%)			(Mt)				(%)	(kg/t)			
IPCC default EF[c]									12.06 (6.70-16.75)	1.68 (0.60-2.68)	0.8 (0.20-1.34)	0.07 (0-0.13)
Australia	4.34	T2, T3	CS, PS	113	506	618	485	-21.56	5.8	0.38	0.51	IE, NA
Austria	–			NO	NO	NO	0	–	NO	NO	NO	NO
Belarus	–			NO	NO	NO	0	–	NO	NO	NO	NO
Belgium	0.03	D	D	NO	NO	NO	0	–	NO	NO	NO	NO
Bulgaria	1.56	T1, T2	CS, D	0.05	30	30	30	0.00	12	1.7	0.80	0.067
Canada	0.18	CS	CS	263	74 469	74 731	60	-99.92	0.014	IE, NO	0.001	IE, NO
Croatia	–			NO	NO	NO	0	–	NO	NO	NO	NO
Cyprus	–			NO	NO	NO	0	–	NO	NO	NO	NO
Czechia	2.04	T1, T2	CS, D	4.4	39	44	44	0.00	8.6	1.6	1.3	0.067
Denmark (KP)	–			NO	NO	NO		–	NO	NO	NO	NO
Denmark (Convention)	–			NO	NO	NO	0	–	NO	NO	NE, NO	NE, NO
Estonia	–			NO	NO	NO	0	–	NO	NO	NO	NO
European Union (KP)	0.69			76	367	443	210	-52.53	7.8	1.6	0.48	0.028
European Union (Convention)	0.69			76	367	443	443	-0.19	7.8	1.6	0.48	0.028
Finland	–			NO	NO	NO	0	–	NO	NO	NO	NO
France (KP)	0.00	T2, T3	CS, PS	NO	NO	NO		–	NO	NO	NO	NO
France (Convention)	0.00	T2, T3	CS, PS	NO	NO	NO	0	–	NO	NO	NO	NO
Germany	0.18	T2, T3	CS	2.6	166	169	169	0.11	23	0.58	0.011	IE, NA
Greece	0.86	T1	D	NO	36	36	36	0.00	NO	NO	0.87	IE, NO
Hungary	0.05	T1, T2	CS, D	NO	7.9	7.9	7.9	0.00	NO	NO	0.004	0.000
Iceland	–			NO	NO	NO	0	–	NO	NO	NO	NO
Ireland	0.03	T1	D	NO	NO	NO	0	–	NO	NO	NO	NO
Italy	0.00	T2	D	NO	NO	NO	0	–	NO	NO	NO	NO
Japan	0.04	T1, T2, T3	CS, D	0.32	0.65	0.96	1.3	37.79	3.2	1.7	0.80	0.067
Kazakhstan	5.87	T1	CS, D	11	97	108	108	0.07	16	2.7	6.9	0.67
Latvia	–			NO	NO	NO	0	–	NO	NO	NO	NO
Liechtenstein	–			NO	NO	NO		–	NO	NO	NO	NO
Lithuania	–			NO	NO	NO	0	–	NO	NO	NO	NO
Luxembourg	–			NO	NO	NO	0	–	NO	NO	NO	NO
Malta	–			NO		NO	0	–	NO	NO		
Monaco	–			NO	NO	NO		–	NO	NO	NO	NO
Netherlands	–			NO	NO	NO	0	–	NO	NO	NO	NO
New Zealand	0.16	T1, T2	CS, D	0.13	3.1	3.2	3.2	0.00	17	1.6	0.80	0.067
Norway	0.14	T2	CS	0.12	0.15	0.27	0.15	-44.39	7.2	IE, NO	0.54	IE, NO
Poland	3.97	T1, T2	D	63	59	122	122	0.00	7.5	1.7	0.80	0.067
Portugal	0.02	NO	NO	NO	NO	NO	0	–	NO	NO	NO	NO
Romania	4.92	T1, T2	D	0.53	23	24	24	0.00	12	1.7	0.80	0.067
Russian Federation	3.09	T1, T2	CS, D	108	331	439	419	-4.58	12	2.0	3.7	0.13
Slovakia	0.52	T1, T2	CS	1.5	NO	1.5	1.5	0.00	4.9	0.60	NO	NO
Slovenia	1.26	T2, T3	CS, D, PS	3.2	NO	3.2	3.2	0.00	2.0	0.67	NO	NO
Spain	0.02	CS, T2	CS	0.50	2.3	2.8	2.4	-13.41	3.2	0.97	0.084	0.025
Sweden	–			NO	NO	NO	0	–	NO	NO	NO	NO
Switzerland	–			NO	NO	NO	0	–	NO	NO	NO	NO
Turkey	0.94	T1	D	8.4	76	84	84	0.00	12	1.7	0.80	0.067
Ukraine	3.80	T1, T2, T3	CS, D, M	47	C	C	26	–	11	1.2	C	C
United Kingdom of Great Britain and Northern Ireland (KP)	0.10	T2, T3	CS	0.025	3.2	3.2		–	13	1.2	0.34	IE, NO
United Kingdom of Great Britain and Northern Ireland (Convention)	0.10	T2, T3	CS	0.025	3.2	3.2	2.6	-19.84	13	1.2	0.34	IE, NO
United States of America	0.88	T2, T3	CS	250	436	685	685	0.00	9.2	0.85	0.64	0.14

[a] The national total includes indirect CO_2 emissions from the atmospheric oxidation of CH_4, CO and NMVOCs for the following Parties: Canada, Czechia, Denmark (KP), Denmark (Convention), European Union (KP), European Union (Convention), Finland, Japan, Latvia, Netherlands, Portugal and Switzerland.

[b] Based on IEA data from the IEA (2020) World energy balances data service, www.iea.org/data-and-statistics as of 19 June 2020.

[c] Source of default emission factors: 2006 IPCC Guidelines for National Greenhouse Gas Inventories Volume 2 Chapter 4 Fugitive Emissions, pages 4.12 to 4.19. (Tier 1).

Table 1.11a

Fugitive emissions from fuels: oil and natural gas - CH_4, CO_2 (2018)

	CH_4			CO_2		
	Share of national total[a] (%)	Methods and EF used		Share of national total[a] (%)	Methods and EF used	
		Methods	EF		Methods	EF
Australia	2.29	T1, T2	CS, D, PS	2.67	T1, T2	CS, D, PS
Austria	0.31	T1, T2	CS, D	0.16	T1, T2	CS, D
Belarus	0.90	CS, T1	CS, D	0.00	T1	CS, D
Belgium	0.42	CS, D	CS, D	0.10	T1	D
Bulgaria	0.40	T1	D	1.19	T1	D
Canada	5.26	CS	CS	2.14	CS	CS
Croatia	0.77	T1	D	1.12	CS, T1	CS, D
Cyprus	–			–		
Czechia	0.47	T1, T2	CS, D	0.00	T1, T2	CS, D
Denmark (KP)	0.19	T2, T3	CS, D, OTH, PS	0.48	T2, T3	CS, D, PS
Denmark (Convention)	0.18	T2, T3	CS, D, OTH, PS	0.47	T2, T3	CS, D, PS
Estonia	0.08	T1	D	0.00	T1	D
European Union (KP)	0.63			0.47		
European Union (Convention)	0.63			0.47		
Finland	0.05	T1, T2	CS, D, PS	0.16		
France (KP)	0.24	T1, T2, T3	CS, D, PS	0.68	T1, T2, T3	CS, D, PS
France (Convention)	0.24	T1, T2, T3	CS, D, PS	0.67	T1, T2, T3	CS, D, PS
Germany	0.57	T2, T3	CS	0.16	CS, T2	CS
Greece	0.13	T1	D	0.01	T1	D
Hungary	0.89	T1	CS	0.22	T1	CS
Iceland	0.02	T1	D	0.00	T1	D
Ireland	0.10	T1, T3	CS, D, PS	0.00	T3	CS
Italy	1.04	T1, T2	CS, D	0.48	T1, T2	CS, D
Japan	0.02	CS, T1	CS, D	0.02	T1	D
Kazakhstan	1.37	T1	CS, D	0.00	T1	D
Latvia	0.78	T3	CS	0.00	T3	CS
Liechtenstein	0.65	T3	CS	0.00		
Lithuania	1.33	T1, T2	CS, D	1.25	T1, T2, T3	CS, D, PS
Luxembourg	0.29	T1	D	0.00	T1	D
Malta	–			–		
Monaco	0.63	T3	CS	0.00	T3	CS
Netherlands	0.25	T1, T1b, T3	CS, D	0.55	CS, T1, T2, T3	CS, D, PS
New Zealand	0.52	T1, T3	CS, D	0.64	T1, T2, T3	CS, D, PS
Norway	0.93	T2	CS, PS	4.19	T2	CS, PS
Poland	0.65	T1	CS, D	0.02	T1	CS, D
Portugal	0.08	CR, OTH	CR, OTH	1.61	D	D
Romania	3.12	T1	D	0.48	T1, T2	CS, D
Russian Federation	7.81	T1b, T2	CS, D	1.68	T1b, T2	CS, D
Slovakia	3.09	T1	CS	0.00	T1	CS
Slovenia	0.22	T1	D	0.00	T1	D
Spain	0.05	CS, T1	CS, D	1.13	CS, T1, T2	CS, D, PS
Sweden	0.11	T1, T2, T3	CS, D, PS	1.58	T2, T3	CS, PS
Switzerland	0.41	T1, T2	CS, D	0.06	T2	CS
Turkey	0.50	T1	D	0.03	T1	D
Ukraine	8.96	T1, T2	CS, D	0.64	T1, T2	CS, D
United Kingdom of Great Britain and Northern Ireland (KP)	1.06	T2, T3	CS, PS	0.92	T2, T3	CS, PS
United Kingdom of Great Britain and Northern Ireland (Convention)	1.06	T2, T3	CS, PS	0.92	T2, T3	CS, PS
United States of America	2.74	CS	CS	1.08	CS	CS

[a] The national total includes indirect CO_2 emissions from the atmospheric oxidation of CH_4, CO and NMVOCs for the following Parties: Canada, Czechia, Denmark (KP), Denmark (Convention), European Union (KP), European Union (Convention), Finland, Japan, Latvia, Netherlands, Portugal and Switzerland.

Table 1.11b

Fugitive emissions from fuels: oil and natural gas - oil - CH_4, CO_2 (2018)

	Oil															
	Exploration				Production				Transport				Refining (R) / Storage (S)			
	CH_4 IEF[a]	CO_2 IEF[a]	Activity data		CH_4 IEF[a]	CO_2 IEF[a]	Activity data		CH_4 IEF[a]	CO_2 IEF[a]	Activity data		CH_4 IEF[a]	CO_2 IEF[a]	Activity data	
	kg/unit		Unit	Description	kg/unit		Unit	Description	kg/unit		Unit	Description	kg/unit		Unit	Description
IPCC default EF[b]			10^3 m^3	total oil production					(5.4)(PL) (25)(TT)							
Australia	0.33	3 200	t	Quantity of Oil Flared	2 031	NA, NO	PJ	Crude Oil and ORF Produced	26	NA, NO	PJ	Crude oil transport domestic	1 053	113 702	PJ	Crude Oil refined and stored
Austria	IE	IE, NO	Mt	Mt crude oil	IE	IE, NO	Mt	Mt crude oil	5.4	0.49	Mt	1000 m3 crude oil	31 663	NA, NO	Mt	Mt crude oil Input
Belarus	NO	NO	NE	number of wells drilled	29 891	5 566	PJ	PJ of oil produced	111	10	PJ	PJ oil loaded in tankers	1 400	NA	PJ	PJ oil refined
Belgium	NO	NO	PJ		NO	NO	PJ		150	14	PJ		66	NA, NO	PJ	
Bulgaria	20	4 400	103m4	Indigenous production	2 910	44 990	103m4	Indigenous production	25	2.3	103m3	Indigenous production	31	39 503	103m3	Refinery intake
Canada	IE	IE, NO	NA	NA	1 000	3 079	10^3 m^3	Total crude production	0.073	0.10	10^3 m^3	Total crude production	26	6.1	TJ	Refinery energy consumption
Croatia	194	9 102	1001 m3	total oil production	2 546	41 225	1000 m3	total oil production	5.4	0.49	1000 m3	total oil transported by	22	NA, NO	1001 m3	oil refined
Cyprus	NO	NO	NO		NO	NO	NO		NO	NO			NO	NO	NO	Crude Oil refined (10^3 m3)
Czechia	NE	NE	PJ	(e.g. number of wells drilled)	4 702	7 576	PJ	(e.g. PJ of oil produced)	146	13	PJ	(e.g. PJ oil loaded in tankers)	585	NE, NO	PJ	(e.g. PJ oil refined)
Denmark (KP)	NO	NO	m3	Oil explored	0.59	0.043	10^3 m3	Oil produced	0.020	NA, NO	Mg	Oil loaded	0.11	0.000	Mg	Oil refined
Denmark (Convention)	NO	NO	dnm:m3 grl:NO fro:NO		0.59	0.043	dnm:10^3 m3 grl:NO fro:NO		0.020	NA, NO	dnm:Mg grl:NO fro:NO		0.11	0.000	dnm:Mg grl:NO fro:NO	
Estonia	NO	NO	NA	Exploration	NO	NO	NA	Production	NO	NO	NA	Transport	NO	NO	NA	Refining/Storage
European Union (KP)																
European Union (Convention)																
Finland	NO	NO	NO		NO	NO	NO		NO	NO	NO		25	NO	kt	kt oil refined
France (KP)	5 373	252 097	PJ	Oil produced	54 578	7 201	PJ	Oil produced	65	5.9	PJ	Oil loaded	6.1	1 058 699	PJ	Oil refined
France (Convention)	NE	NE	PJ	Oil produced	54 578	7 201	PJ	Oil produced	65	5.9	PJ	Oil loaded	6.1	1 058 699	PJ	Oil refined
Germany	64	0.48	number	Number of wells drilled	0.018	0.12	t	oil produced	0.005	NA, NO	t	oil transported	0.028	4.5	t	oil refined
Greece	NE	NE, NO			0.69	0.050	kt		27	NE, NO	kt		26	IE, NO	kt	
Hungary	IE	IE, NO	NA		1 801	130	1000 m3	conventional oil production (thousand m3)	9.5	47	1000 m3	Oil transported by pipeline (thousand m3)	22	NA, NO	1000 m3	Oil refined (thousand m3)
Iceland	NO	NO			NO	NO			NO	NO			NO	NO		
Ireland	NO	NO	PJ		NO	NO	PJ		NO	NO	PJ		110	NO	PJ	
Italy	NO	NO	NA	Wells drilled	1 872	321	Gg	Oil produced	6.2	0.56	Gg	Oil transported	18	20 158	Gg	Oil refined
Japan	IE	IE, NO			1 152 736	83 253	10^6 m^3	Oil produced	76 625	5 276	10^6 m^3	Oil & condensate produced	2 629	NE, NO	10^6 m^3	Oil refined
Kazakhstan	0.19	9.1	10^m^3		2 170	157	t		8.7	0.80	t		36	7.0	t	
Latvia	NO	NO	kt	Exploration	NO	NO	kt	Production	NO	NO	kt	Transport	NO	NO	kt	Refining/Storage
Liechtenstein	NO	NO	NO	number of wells drilled	NO	NO	NO	oil produced	NO	NO	NO	oil loaded in tankers	NO	NO	NO	oil refined
Lithuania	194	9 102	thous.m3	Oil produced	1.5	0.11	thous.m3	Oil produced, thous.m3	5.4	0.49	thous.m3	Oil transported, thous.m3	2.6	NO	thous.m3	Oil refined
Luxembourg	NO	NO	NA	number of wells drilled	NO	NO	NA	oil produced	NO	NO	NA	oil loaded in tankers	NO	NO	NA	oil refined
Malta	NO	NO	NO	number of wells drilled	NO	NO	NO	oil produced	NO	NO	NO	oil loaded in tankers	NO	NO	NO	oil refined
Monaco	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
Netherlands	IE	IE, NO	PJ		IE	IE, NO	PJ		5.8	0.53	Gg		165	400 229	PJ	
New Zealand	0.000	0.43	number of wells drilled		0.001	0.000	m3		0.030	0.003	m3		0.022	NA, NO	m3	
Norway	IE	IE, NO	Number of wells	Exploration wells	IE	IE, NO	10^3 m^3	Oil produced	1 341	28 166	PJ	Oil loaded in tankers	2 457	1 659 183	PJ	Oil refined
Poland	NA	NA	NA	NA	78 581	5 675	PJ	Production	6.3	0.57		oil ltransported by pipeline	1 121			oil refined
Portugal	NO	NO	NO		NO	NO	NO		5 400 000	490	Mt		4.9	14 057 427 847	Mt	
Romania	5 506	258 306	PJ	oil produced	62 435	7 946	PJ	oil produced	149	13	PJ	oil refined	612	IE, NO	PJ	oil refined
Russian Federation	194	9 102	10^3m3	Oil produced	1 801	130	10^3 m3	Oil and Condensate produced	5.4	0.49	10^3 m3	Oil transpoted by pipeline	22	NE, NO	10^3 m3	Oil refined
Slovakia	NO	NO	NO		3 600	260	kt	Production	5.4	0.49	kt	Transfer	41	NE	kt	Refining/Storage
Slovenia	NO	NO	1000 m3	NA	NO	NO	1000 m3	Conventional oil produced	NA	430	1000 m3	Consumption of LPG	NO	NA, NO	1000 m3	Oil refined
Spain	NA	NA, NO	Tg	Crude oil produced	706	57	Tg	Crude oil produced	497	45	Tg	Transport of crude oil	1 561	57 827 895	Tg	Oil refined
Sweden	C	C, NA	TJ	Consumption of feedstock	NO	NO		Oil production	745	NE	PJ	Transported amount of oil	C	C, NA	Mt	Consumption of crude oil
Switzerland	NO	NO			NO	NO			152	NA, NO	PJ	Crude oil imported (pipeline)	204	NA, NO	PJ	Crude oil used
Turkey	NO	NO	NO		3 600	260	10^3 m^3	oil production	4.5	90	10^3 m^3	oil transported by pipeline	41	NA, NO	10^3 m^3	(petroleum refining)
Ukraine	747	80 400	10^3 m^3	Oil Produced	30 001	2 150	10^3 m^3	oil produced	5.4	0.49	10^3 m^3	Crude oil transported by pipeline	880	NA, NE	PJ	Oil refined
United Kingdom of Great Britain and Northern Ireland (KP)	25	3 200	t	Exploration drilling: fuel use	1 237	67 447	PJ	Oil produced	0.010	NO	t	Oil loading	2.3	NO	PJ	Refinery throughput
United Kingdom of Great Britain and Northern Ireland (Convention)	25	3 200	t	Exploration drilling: fuel use	1 237	67 447	PJ	Oil produced	0.010	NO	t	Oil loading	2.3	NO	PJ	Refinery throughput
United States of America	3 708	690 151	10^6 Bbl(oil US)	Annual Domestic Production	348 562	7 577 189	10^6 Bbl(oil US)	Annual Domestic Production	1 360	193	10^6 Bbl(oil US)	Refinery Feed	4 995	602 934	10^6 Bbl(oil US)	Refinery Feed

[a] The units of the implied emission factors (IEF) vary from Party to Party depending on the unit of the activity data used. The unit of the IEF is kg/unit of activity data.

[b] Source of default emission factors: 2006 IPCC Guidelines for National Greenhouse Gas Inventories Volume 2 Chapter 4 Fugitive Emissions. Table 4.2.4. Tier 1 Emission Factors in developed coutries. Values converted from Gg to kg.

Table 1.11c

Fugitive emissions from fuels: oil and natural gas - natural gas - CH_4, CO_2 (2018)

	Natural Gas																			
	Production				Processing				Transmission and Storage				Distribution				Other			
	CH_4 IEF[a]	CO_2 IEF[a]	Activity data		CH_4 IEF[a]	CO_2 IEF[a]	Activity data		CH_4 IEF[a]	CO_2 IEF[a]	Activity data		CH_4 IEF[a]	CO_2 IEF[a]	Activity data		CH_4 IEF[a]	CO_2 IEF[a]	Activity data	
	kg/unit		Unit	Description	kg/unit		Unit	Description	kg/unit		Unit	Description	kg/unit		Unit	Description	kg/unit		Unit	Description
IPCC default EF[b]	(380 to 2300)	(140 to 820)	10^6 m^3	Gas produced	(150 to 1030)	(12 to 320)	10^6 m^3	Gas produced	(66-480)(T) (25)(S)	(0.88)(T) (0.11)(S)	10^6 m^3	marketable gas	1 100	51	10^6 m^3	utility sales				
Australia	45 422	2 335	PJ	Natural gas produced	10 800	2 075	PJ	Natural gas produced	NA	NA	NA	Length of Pipeline	273 635	15 601	PJ	Utility sales	NA	NA	NA	Appliance count and PJs
Austria	3 938	66 047	Mm3	Mm3 natural gas	NA	65 015	Mm3	Mm3 natural gas	562	25	km	km pipeline length	50	2.2	km	km distribution network length	NO	NO	Mm3	Mm3 natural gas stored
Belarus	126 818	4 154	PJ	PJ gas produced	IE	IE, NO	NE		25	0.99	10^6 m^3	Gas consumed	1 100	51	10^6 m^3	Gas consumed	8 994	NO	10^6 m^3	Gas consumed
Belgium	NO	NO	PJ		NO	NO	PJ		166	NA, NO	PJ		460	15	PJ		NO	NO	PJ	
Bulgaria	2 540	3 600	106m3	Indigenous production	570	7 210	106m3	Indigenous production	2 113	255	km	Pipeline length	230	10	km	Pipeline length	734	6.1	106m3	Natural gas consumption at energy and industrial plants
Canada	449	13	10^6 m^3	Natural gas production	56	41	10^6 m^3	Natural gas production	569	408	km	Transmission pipeline length	144	7.4	km	Distribution pipeline length	846	162	number	Number of gas wells + spills
Croatia	1 341	169 565	1000000 m3	gas produced	592	3 166	1000000 m3	gas produced	480	4.1	1000000 m3	marketable gas	1 100	51	1000000 m3	utility sales	NO	NO	NO	
Cyprus	NO	NO	NO		NO	NO	NO		NO	NO	NO		NO	NO	NO		NO	NO	NO	
Czechia	38 145	15	PJ	(e.g. PJ gas produced)	NA	NA, NO	PJ		4 495	18	PJ	(e.g. PJ gas consumed)	126 924	505	PJ	(e.g. PJ gas consumed)	IE	IE, NO	PJ	(e.g. PJ gas consumed)
Denmark (KP)	380	14	10^6 m3	Gas produced	NA	NA	10^6 m3	Gas produced	6.3	0.16	10^6 m3	Gas transmission	70	1.6	10^6 m3	Gas distributed	NO	NO	m3	Incl. In transmission
Denmark (Convention)	380	14	dnm:10^6 m3 grl:NO fro:NO		NA, NO	NA, NO	dnm:10^6 m3 grl:NO fro:NO		6.3	0.16	dnm:10^6 m3 grl:NO fro:NO		70	1.6	dnm:10^6 m3 grl:NO fro:NO		NO	NO	dnm:m3 grl:NO fro:NO	
Estonia	NO	NO	NA	Production	NO	NO	NA	Processing	2 218	30	PJ	Amount of the transmission of Natural Gas	36 960	1 714	PJ	Amount of natural gas distributed	NO	NO	NA	Other
European Union (KP)																				
European Union (Convention)																				
Finland	NO	NO	NO		NO	NO	NA		3 840	NE, NO	PJ	PJ gas consumed	55 077	NE, NO	PJ	PJ gas distributed	NO	NO	NO	
France (KP)	IE	IE, NO	PJ	NO	304	5 361 447	PJ	Gas processed	10 571	112	PJ	Gas consumed	15 142	161	PJ	Gas consumed	NO	NO	PJ	NO
France (Convention)	IE	IE, NO	PJ	NO	304	5 361 447	PJ	Gas processed	10 571	112	PJ	Gas consumed	15 142	161	PJ	Gas consumed	NO	NO	PJ	NO
Germany	0.038	0.11	1000 m³	gas produced	0.016	95	1000 m³	gas produced	2 195	9.3	km	lenght of transmission pipelines	176	1.2	km	lenght of distribution pipelines	23	0.19	TJ	gas consumed
Greece	1 930	214	mil_m3		IE	IE, NO	mil_m3		298	0.99	mil m3		1 100	51	mil m3		IE	IE, NO		
Hungary	1 340	48	million m3	Gas production (million m3)	935	250	million m3	Sweet gas plants-raw gas feed (million m3)	298	0.99	million m3	Marketable gas (million m3)	1 100	51	million m3	Utility sales (million m3)	NO	NO	NO	
Iceland	NO	NO			NO	NO			NO	NO			NO	NO			NO	NO		
Ireland	37	IE, NO	PJ		IE	IE, NO	PJ		IE	IE, NO	PJ		9 203	118	PJ		NO	NO	PJ	
Italy	906	82	Mm3	Gas produced	406	320	Mm3	Gas produced	391	8.6	Mm3	Gas transported	3 888	85	Mm3	Gas distributed	NO	NO	NA	other
Japan	2 217	78	10^6 m^3	Gas produced	755	235	10^6 m^3	Gas produced	245	NA, NO	10^6 m^3	Gas sold	10	NA, NO	10^6 m^3	City gas sold	IE	NA, NO		
Kazakhstan	1 340	48	10^6 m^3		0.59	0.17	10^6 m^3		298	0.99	bln m3		1 100	51	bln m3		3.7	NA	kt	
Latvia	NO	NO	m3	Production	NO	NO	m3	Processing	0.68	0.002	m3	Transmission and storage	0.65	0.002	m3	Distribution	0.65	0.002	m3	Other
Liechtenstein	NO	NO	NO	gas produced	NO	NO	NO	gas produced	164	1.3	km	gas consumed	48	0.38	TJ	gas consumed	NO	NO	TJ	gas produced
Lithuania	NO	NO	NO		NO	NO	NO		952 271	860	kt	Natural gas leakages	952 271	860	kt	Natural gas leakages	952 271	860	kt	Natural gas leakages
Luxembourg	NO	NO	NA	gas produced	NO	NO	NA	NO	13	0.024	TJ	gas consumed	30	1.4	TJ	gas consumed	NO	NO	NA	NO
Malta	NO	NO	NO	gas produced	NO	NO	NO	gas processed	NO	NO	NO	gas consumed	NO	NO	NO	gas consumed	NO	NO	NO	gas consumed
Monaco	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	0.74	0.012	m	CH4	NO	NO	NO	NO
Netherlands	IE	IE, NO	mln m3		IE	IE, NO	PJ		1 549	28	PJ		44 336	1 364	10^3 km		NO	NO	PJ	
New Zealand	1 100	40	1E6 m3		NE	NE, NO	NA	Not significant.	495 019	52 835	TJ		14 002	2 158	TJ		NO	NA, NO	NA	
Norway	IE	11 311	10^6 m^3	Gas produced	IE	IE, NO	PJ	Gas processed	IE	IE, NO	PJ	Gas export	44 507	IE, NO	PJ	Gas consumption	NE	NE	PJ	Gas processed
Poland	71 342	2 544	PJ	Production	31 949	46 619	PJ		14 889	27	PJ	gas consumed	34 120	1 582	PJ	gas consumed	775	3.4	PJ	NA
Portugal	NO	NO	NO		NO	NO	NO		11	0.21	toe NG Transmitted		1 157	22	toe NG Distributed		NO	NO	NO	
Romania	1 340	48	106m4	gas produced	590	166	106m4	gas produced and processed	248	0.80	106m4	gas produced	1 100	51	106m4	gas supplied	203 793	NO	PJ	gas consumed
Russian Federation	213	3.9	10^6 m3	Natural Gas produced	IE	IE, NO	10^6 m3	Natural Gas produced	6 025	7.49	10^6 m3	Marketable gas	1 100	51	10^6 m3	Gas consumed	NO	NO	NA	
Slovakia	2 300	82	mil m3	Production/Processing	1 030	320	mil m3		480	0.88	mil m3	Transfer	1 100	51	mil m3	Distribution	25	0.11	mil m3	Storage
Slovenia	1.3	0.048	1000 m3	Gas production	NO	NO	1000 m3	NA	0.37	0.001	1000 m3	Marketable gas	1.1	0.051	1000 m3	Utility sale	NO	NO	1000 m3	NA
Spain	2 239	80	Mm3	Mm3 gas produced	150	12	Mm3	Mm3 gas produced	1 569	33	PJ	PJ gas (NCV)	3 406	74	PJ	PJ of gaseous fuels (natural gas,	NO	NO	NO	NO
Sweden	NO	NO		Gas produced	NO	NO		Gas produced	NA	NA	km	Length of transmission pipelines	NA	NA	km	Length of distribution pipelines	NO	NO		
Switzerland	NO	NO	PJ	Amount of natural gas produced	NO	NO			18 126 000	605 000	PJ	Losses of natural gas in transit pipeline	18 126 000	605 000	PJ	Losses of natural gas in distribution network	NO	NO	PJ	Losses of natural gas due to major accidents
Turkey	2 300	82	10^6 m^3	Natural gas production	1 030	320	10^6 m^3	Natural gas production	466	0.86	10^6 m^3	Natural gas transmission by pipeline	1 100	51	10^6 m^3	Natural gas distribution	NO	NO	NO	
Ukraine	12 190	97	10^6 m^3	Natural Gas Produced	790	250	10^6 m^3	Natural Gas Processed	270 223	3 093	Mt	gas transmitted	16 082 689	184 083	10^9 m^3	The volume of natural gas	227 950	857	PJ	Residential and Non-
United Kingdom of Great Britain and Northern Ireland (KP)	IE	IE, NO	PJ	Gas produced	1 636	113 434	PJ	Gas produced	6.6	0.31	GWh	Natural gas supply	265	13	GWh	Natural gas supply	NO	NO	NA	
United Kingdom of Great Britain and Northern Ireland (Convention)	IE	IE, NO	PJ	Gas produced	1 636	113 434	PJ	Gas produced	6.6	0.31	GWh	Natural gas supply	265	13	GWh	Natural gas supply	NO	NO	NA	
United States of America	106 366 152	315 103 271	10^9 ft^3	Annual Production	16 027 272	803 738 021	NA	Annual Production	45 242 341	16 383 999	10^9 ft^3	Consumption	15 785 469	464 776	10^9 ft^3	Consumption	94	4.1	abandoned wells	Abandoned Wells

[a] The units of the implied emission factors (IEF) vary from Party to Party depending on the unit of the activity data used. The unit of the IEF is kg/unit of activity data.

[b] Source of default emission factors: 2006 IPCC Guidelines for National Greenhouse Gas Inventories Volume 2 Chapter 4 Fugitive Emissions. Table 4.2.4. Tier 1 Emission Factors in developed coutries. Values converted from Gg to kg.

Table 1.11d

Fugitive emissions from fuels: oil and natural gas - venting and flaring - CH_4, CO_2 (2018)

	Venting and flaring																			
	Oil								Gas						Combined					
	Venting				Flaring				Venting			Flaring			Venting				Flaring			
	CH_4 IEF[a]	CO_2 IEF[a]	Activity data		CH_4 IEF[a]	CO_2 IEF[a]	Activity data		CH_4 IEF[a]	Activity data		CH_4 IEF[a]	CO_2 IEF[a]	Activity data	CH_4 IEF[a]	CO_2 IEF[a]	Activity data		CH_4 IEF[a]	CO_2 IEF[a]	Activity data	
	kg/unit		unit	Description	kg/unit		unit	Description	kg/unit	unit	Description	kg/unit		unit	Description	kg/unit		unit	Description	kg/unit		unit	Description
IPCC default EF[b]																							
Australia	IE	IE, NO	NA	NA	34 901	2 900 888	kt	Quantity of Gas Flared	13 013	PJ	Natural gas, crude oil and ORF produced	4 762	2 707 940	kt	Natural gas, crude oil and ORF produced	NO	NO	NA	NA	NO	NO	NA	NA
Austria	IE	IE, NO	NA		IE	IE, NO	NA		IE	NA		IE	IE, NO	NA		IE	IE, NO	NA		IE	IE, NO	NA	
Belarus	IE	IE, NO	10^6 m^3	Oil produced	IE	IE, NO	10^6 m^3	Oil consumption	IE	10^6 m^3	Gas produced	IE	IE, NO	10^6 m^3	Gas consumption	IE	IE, NO	10^6 m^3	Venting	0.004	0.64	10^6 m^3	Flaring
Belgium	NO	NO	PJ		NO	NO	PJ	Not Applicable	17	PJ		NO	NO	PJ		NO	NO	PJ		IE	NA	PJ	
Bulgaria	IE	IE	NA	Indigenous production	1.0	55 539	TJ	Natural gas used for hydrogen production in oil refineries	IE	NA	Indigenous production	IE	IE	NA	Indigenous production	NO	NO	NO		NO	NO	NO	
Canada	2 914	33 951	10^3 m^3	Total crude production	10 056	3 107 566	10^6 m^3	Associated gas flared	1 437	10^6 m^3	Natural gas production	13 292	2 193 106	10^6 m^3	Non-associated gas	56	1.3	number	Number of wells drilled	86	14 245	number	Number of wells drilled
Croatia	25	2.3	1000 m3	oil	IE	IE, NO	1000 m3		IE	1000000 m3	gas	IE	IE, NO	1000000 m3		NO	NO	NO		NO	NO	NO	
Cyprus	NO	NO		Fuel transported (m3)	NO	NO			NO			NO	NO			NO	NO			NO	NO		
Czechia	235 390	48 701	PJ	(e.g. PJ oil produced)	568	919 913	PJ	(e.g. PJ gas consumption)	NO	PJ	(e.g. PJ gas produced)	NO	NO	PJ	(e.g. PJ gas consumption)	NO	NO	PJ		NO	NO	PJ	
Denmark (KP)	NO	NO	GJ	(e.g. PJ oil produced)	0.018	58	GJ	Refinery gas consumption	16	GJ	Venting in gas terminals	0.029	57	GJ	Gas consumption	NO	NO	GJ	Amount vented	0.25	58	GJ	Gas consumption
Denmark (Convention)	NO	NO	grl:NO fro:NO		0.018	58	grl:NO fro:NO		16	grl:NO fro:NO		0.029	57	grl:NO fro:NO		NO	NO	grl:NO fro:NO		0.25	58	grl:NO fro:NO	
Estonia	NO	NO	NA	Oil	NO	NO	NA	Oil	NO	NA	Gas	NO	NO	NA	Gas	NO	NO	NA	Combined	NO	NO	NA	Combined
European Union (KP)																							
European Union (Convention)																							
Finland	NO	NO	NO		1.0	54 854	TJ	used fuels, TJ	NO	NO		IE	IE, NO	NO		NO	NO	NO		NO	NO	NO	
France (KP)	19 942	2 631	PJ	Oil produced	14 431	55 007 313	PJ	Gas Flared	IE	Gg	Venting emissions are not separately reported by the plant, included within Flaring emission reporting.	5 724	2 150 527	Gg	Consumption	NO	NO	PJ	Oil and Gas produced	NO	NO	PJ	Consumption
France (Convention)	19 942	2 631	PJ	Oil produced	14 431	55 007 313	PJ	Gas Flared	IE	Gg	Venting emissions are not separately reported by the plant, included within Flaring emission reporting.	5 724	2 150 527	Gg	Consumption	NO	NO	PJ	Oil and Gas produced	NO	NO	PJ	Consumption
Germany	IE	IE, NO			0.27	3 682	kt	oil refined	IE			IE	IE			IE	IE, NO	m3		IE	IE, NO		
Greece	844	111	kt		29	48 045	kt		182	mil m3		2.8	4 200	mil_m3		NO	NO			NO	NO		
Hungary	720	95	1000 m3	Conventional oil production	372	66 839	1000 m3	Conventional oil production	2 435	million m3	Sour gas plants-raw gas	2.5	3 827	million m3	Gas production (million	IE	IE, NO	NO		IE	IE, NO	NA	
Iceland	NO	NO			NO	NO			NO			NO	NO			NO	NO			NO	NO		
Ireland	NO	NO	PJ		NO	NO	PJ		4 592	PJ		1 000	55 557 097	PJ	Natural gas flaring	NO	NO	PJ		NO	NO	PJ	
Italy	179	2 061	Gg	Oil produced	276	38 926	Gg	Oil produced	NA	Mm3	Gas produced	36	4 200	Mm3	Gas produced	NO	NO	NA	Combined	NO	NO	NA	Combined
Japan	720 000	95 000	10^6 m^3	Oil produced	25 000	41 000 000	10^6 m^3	Oil produced	IE	10^6 m^3	Gas produced in relevant facilities	2.0	3 000	10^6 m^3	Gas produced	IE	IE, NO			NO	NO	wells	Number of wells tested
Kazakhstan	NA	NA	NA		IE	IE	NA		NA	NA		IE	IE	NA		IE	IE	IE		1.4	2 150	t	
Latvia	NO	NO	kt	Oil	NO	NO	kt	Oil	0.68	m3	Gas	NO	NO	kt	Gas	NO	NO	kt	Combined	NO	NO	kt	Combined
Liechtenstein	NO	NO	NO	oil produced	NO	NO	NO	gas consumed	NO	NO	gas produced	NO	NO	NO	gas consumed	NO	NO	NO	gas produced	NO	NO	NO	Gas/Oil Produced
Lithuania	720	95	thous.m3	Oil produced, thous.m3	25	41 000	thous.m3	Oil produced, thous.m3	NO	NO		NO	NO	NO		NO	NO	NO		NO	NO	NO	
Luxembourg	NO	NO	NA	oil produced	NO	NO	NA	gas consumed	NO	NA	gas produced	NO	NO	NA	gas consumed	NO	NO	NA	combined oil and gas production	NO	NO	NA	combined oil and gas consumption
Malta	NO	NO	NO	oil produced	NO	NO	NO	gas consumed	NO	NO	gas produced	NO	NO	NO	gas consumed	NO	NO	NO	NO	NO	NO	NO	NO
Monaco	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
Netherlands	IE	IE, NO	10^6 m^3		IE	IE, NO	10^6 m^3		IE	PJ		IE	IE, NO	PJ		IE	IE	PJ		IE	IE	PJ	
New Zealand	IE	IE	NA	The fields produce both oil and gas and, therefore are reported as combined. Disaggregated data does not exist.	IE	IE	NA	The fields produce both oil and gas and, therefore are reported as combined. Disaggregated data does not exist.	NA	NA		IE	IE	NA	The fields produce both oil and gas and, therefore are reported as combined. Disaggregated data does not exist.	14 125	NA, NO	TJ		424	52 788	TJ	
Norway	IE	IE, NO	PJ	(See Venting combined)	9.5	74 499 340	PJ	Oil flared	IE	PJ	(See Venting combined)	136 134	74 896 949	PJ	Gas flared	1 001	5 141	PJ	Oil and gas produced	IE	IE, NO	PJ	(See Flaring of Oil/Gas in i/ii)
Poland	884	170	Gg	oil produced	47 619	29	Gg	oil produced	IE	NA	NA	1 200	16 909	10^6m3	gas production	NO	NA, NO	NA	NA	NO	NA, NO	NA	NA
Portugal	NO	NO	NO		1 399	2 389 534	kt		NO	NO		NO	NO	NO		NO	NO	NO		NO	NO	NO	
Romania	246 901	51 083	PJ	oil produced	596	964 900	PJ	gas consumed	182	106m4	gas produced	0.76	1 200	106m4	gas consumed	NA	NA, NO		gas and oil produced	NA	NA, NO		gas and oil combined
Russian Federation	720	95	10^3 m3	Oil and Condensate produced	12 000	2 000 000	10^6 m3	Associated gas flaring	IE	10^6 m3	Marketable Gas	0.11	195	10^6 m3	Natural Gas production	NO	NO	NA		NO	NO	NA	
Slovakia	720	95	kt	Venting oil	25	41 000	kt	Flaring oil	320	mil m3	Venting gas	2.0	3 000	mil m3	Flaring gas	NO	NO	NA		NO	NO	NA	
Slovenia	NA	NA, NO	1000 m3	Conventional oil produced	NO	NO	1000 m3	Conventional oil produced	0.25	1000 m3	Marketable gas	0.001	1.2	1000 m3	Gas production	NO	NO	1000 m3	NA	NO	NO	1000 m3	NA
Spain	815 402	107 586	Tg	Tg gas venting	359	5 066 589	Tg	Tg gas consumption	322 090 194	PJ	gas produced	190	37 334	Mm3	Mm3 gas consumption	NO	NO	NO	NO	NO	NO	NO	NO
Sweden	IE	IE		Venting of oil products	5.4	86 322	TJ	Venting of oil products	0.64	m3	Venting of gas products	1.0	45 446	TJ	Venting of gas products	IE	IE		Venting of combined products	NA	NA		Venting of combined products
Switzerland	NO	NO					PJ		NO			NO	NO	NO	Amount of natural gas produced	NO	NO			NO	NO		
Turkey	720	95	10^3 m^3	(Oil production	219	50 102	10^3 m^3	Oil production	33 620	10^6 m^3	Natural gas production	2.0	3 000	10^6 m^3	Natural gas production	NO	NO	NO		NO	NO	NO	
Ukraine	855	113	10^3 m^4	oil produced	29	48 500	10^3 m^3	oil produced	IE	NA	gas transmission	2.3	3 550	10^6 m^3	Natural Gas Produced	IE	IE, NA	NA	—	IE	IE, NA	NA	—
United Kingdom of Great Britain and Northern Ireland (KP)	NA	NA	NA		12	2 563	t	Amount of gas flared	NA	NA		9.0	2 256	t	Amount of gas flared	IE	IE, NO	NA		IE	IE, NO	NA	
United Kingdom of Great Britain and Northern Ireland (Convention)	NA	NA	NA		12	2 563	t	Amount of gas flared	NA	NA		9.0	2 256	t	Amount of gas flared	IE	IE, NO	NA		IE	IE, NO	NA	
United States of America	IE	IE, NA	NA	Production	IE	IE, NA	NA	Production	IE	NA	Production	IE	IE, NA	NA	Production	IE	IE, NA	NA	Production	IE	IE, NA	10^9 ft^3	Gas Flared

[a] The units of the implied emission factors (IEF) vary from Party to Party depending on the unit of the activity data used. The unit of the IEF is kg/unit of activity data.

[b] Source of default emission factors: 2006 IPCC Guidelines for National Greenhouse Gas Inventories Volume 2 Chapter 4 Fugitive Emissions. Table 4.2.4. Tier 1 Emission Factors in developed coutries. Values converted from Gg to kg.

Table 1.12

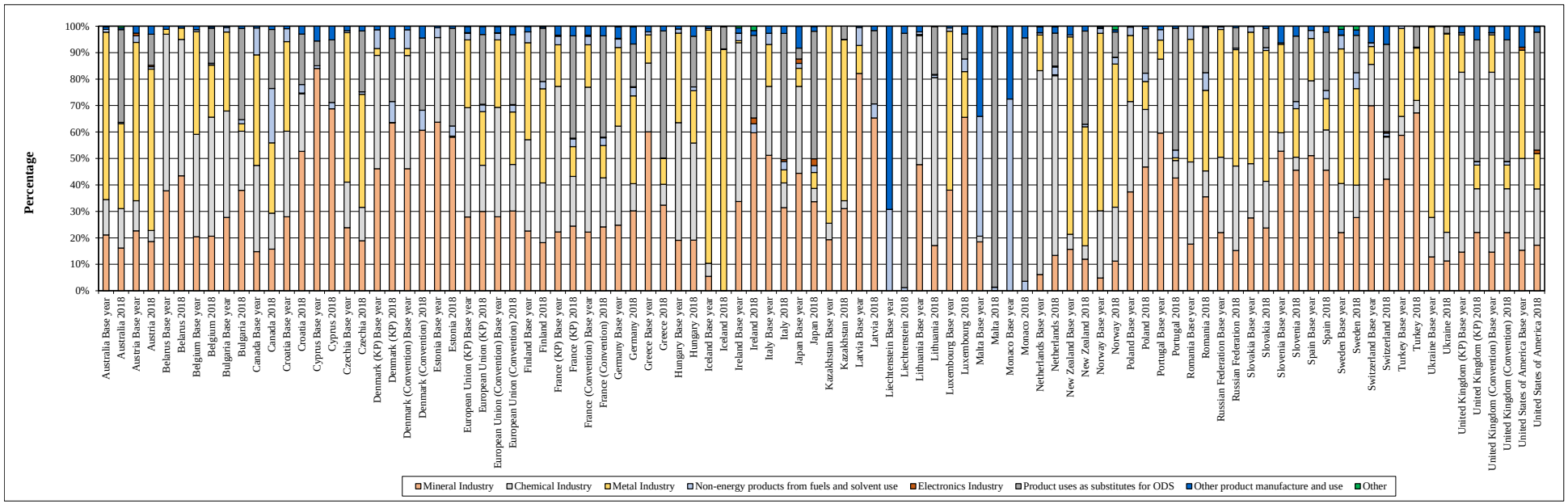
CO_2 transport and storage (2018)

	Transport of CO_2		Injection and storage		Other	
	CO_2 IEF	Activity data	CO_2 IEF	Activity data	CO_2 IEF	Activity data
	kg/kt	(kt)	kg/kt	(kt)	kg/kt	(kt)
IPCC default EF[a]	(0.00014 to 0.014 Gg/year/km)	10^3 m^3	n.a.	10^3 m^3	n.a.	10^3 m^3
Australia	NO	NO	NO	NO	NO	NO
Austria	NO	NO	NO	NO	NO	NO
Belarus	NO	NO	NO	NO	NO	NO
Belgium	NO	NO	NO	NO	NO	NO
Bulgaria	NO	NO	NO	NO	NO	NO
Canada	73	3 700	IE, NO	3 684	NA	NA
Croatia	NO	NO	NO	NO	NO	NO
Cyprus	NO	NO	NO	NO	NO	NO
Czechia	NO	NO	NO	NO	NO	NO
Denmark (KP)	NO	NO	NO	NO	NO	NO
Denmark (Convention)	NO	NO	NO	NO	NO	NO
Estonia	NO	NO	NO	NO	NO	NO
European Union (KP)	NA, NO	NA, NO	IE, NA, NO	NA, NO	NO	NO
European Union (Convention)	NA, NO	NA, NO	IE, NA, NO	NA, NO	NO	NO
Finland	NA	NA	NA	NA	NO	NO
France (KP)	NO	NO	IE	NA	NO	NO
France (Convention)	NO	NO	IE	NA	NO	NO
Germany	NO	NO	NO	NO	NO	NO
Greece	NO	NO	NO	NO	NO	NO
Hungary	NO	NO	NO	NO	NO	NO
Iceland	NO	NO				
Ireland	NO	NO	NO	NO	NO	NO
Italy	NO	NO	NO	NO	NO	NO
Japan	NA, NO	80	NA, NE	159	NO	NO
Kazakhstan	NO	NO	NA	NA	NA	NA
Latvia	NO	NO	NO	NO	NO	NO
Liechtenstein	NO	NA, NO	NO	NO	NO	NO
Lithuania	NO	NO	NO	NO	NO	NO
Luxembourg	NO	NO	NO	NO	NO	NO
Malta	NO	NO	NO	NO	NO	NO
Monaco	NO	NO	NO	NO	NO	NO
Netherlands	NO	NO	NO	NO	NO	NO
New Zealand	NO	NO	NO	NO	NO	NO
Norway	NE, NO	758	563	25 059		
Poland	NO	NO	NO	NO	NO	NO
Portugal	NO	NO	NO	NO	NO	NO
Romania	NO	NO	NO	NO	NO	NO
Russian Federation	NO	NO	NO	NO	NO	NO
Slovakia	NO	NO	NO	NO	NO	NO
Slovenia	NO	NO	NO	NO	NO	NO
Spain	NO	NO	NO	NO	NO	NO
Sweden	NO	NO	NO	NO		
Switzerland	NO	NO	NO	NO	NO	NO
Turkey	NA, NO	NA, NO	NE, NO	NE, NO	NO	NO
Ukraine	NO	NO	NO	NO	NO	NO
United Kingdom of Great Britain and Northern Ireland (KP)	NO	NO	NO	NO		
United Kingdom of Great Britain and Northern Ireland (Convention)	NO	NO	NO	NO		
United States of America	IE	IE	IE	IE	IE, NA	IE

[a] Source of default emission factors: 2006 IPCC Guidelines for National Greenhouse Gas Inventories Volume 2 Chapter 5 Carbon Dioxide Transport, Injection and Geological Storage. Table 5.2. Tier 1 Emission Factors for pipeline transport of CO_2 from a CO_2 capture site to the final storage site.

Figure 2.1

Contribution of subsectors to total GHG emissions in the Industrial Processes and Product Use sector[a, b]



[a] In accordance with the UNFCCC reporting guidelines on annual inventories of Annex I Parties the year 1990 should be the base year for the estimation and reporting of inventories. However, in accordance with decisions 9/CP.2, 11/CP.4, and 7/CP.12 some Parties with economies in transition use base years other than 1990: Bulgaria (1988), Croatia (1990), Hungary (average of 1985 to 1987), Poland (1988), Romania (1989) and Slovenia (1986).

[b] Indirect CO_2 emissions are excluded from the totals in this graph.

Table 2.1

Mineral industry - CO_2 (2018)

	Methods and EF used		Cement production				Lime production		Glass production	
			Share of national total[a]	Activity data		CO_2 IEF	Share of national total[a]	CO_2 IEF	Share of national total[a]	CO_2 IEF
	Methods	EF		Description[b]	Value					
			(%)		(kt)	(t/t)	(%)	(t/t)	(%)	(t/t)
IPCC default EF[c]								0.59-0.86		0.2
Australia	T2	CS	0.53	Clinker Production	5 443	0.54	0.18	0.68	–	IE, NO
Austria	T1, T3	D, PS	2.31	Cement clinker	3 552	0.51	0.69	0.74	0.05	0.079
Belarus	T1, T2	CS, D	2.35	Used clincer production data	4 122	0.52	0.39	0.75	0.10	0.14
Belgium	T3	CS, PS	2.14	Clinker Production	4 605	0.55	1.32	0.78	0.14	0.11
Bulgaria	T1, T2	CS, D, PS	2.12		2 297	0.53	0.44	0.78	0.14	0.13
Canada	T1, T2	CS, D	0.98	clinker production	13 184	0.54	0.19	0.75	0.01	0.42
Croatia	T2, T3	D, PS	5.09	clinker production	2 326	0.52	0.37	0.77	0.13	0.43
Cyprus	CS, T1	CS, D	9.57	Clinker production	1 593	0.53	0.06	0.73	–	NO
Czechia	T1, T3	D, PS	1.46	clinker production	3 514	0.53	0.58	0.76	0.12	0.12
Denmark (KP)	CS, T2, T3	CS, D, PS	2.40	Production of Clinker	2 141	0.54	0.08	0.79	0.02	0.052
Denmark (Convention)	CS, T2, T3	CS, D, PS	2.32	Production of Clinker	2 141	0.54	0.07	0.79	0.02	0.052
Estonia	T1, T2, T3	D, PS	1.49	Clinker production	505	0.59	0.27	0.72	0.05	0.11
European Union (KP)			1.84		147 208	0.53	0.46	0.74	0.10	NE
European Union (Convention)			1.85		147 208	0.53	0.46	0.74	0.10	NE
Finland	T1, T3	CS, D, PS	1.07	Produced clinker	1 187	0.51	0.55	0.81	0.01	0.41
France (KP)	T1, T2, T3	CS, D, PS	1.51	Clinker consumption	12 845	0.52	0.52	0.67	0.13	0.17
France (Convention)	T1, T2, T3	CS, D, PS	1.48	Clinker consumption	12 845	0.52	0.51	0.67	0.12	0.17
Germany	T1, T2	CS, D	1.54	produced clinker	24 958	0.53	0.56	0.75	0.11	0.12
Greece	CS, T1	CS, D, PS	3.71	clinker production	6 548	0.52	0.23	0.79	0.02	0.15
Hungary	T2, T3	CS, D, PS	1.39	Clinker production (kt)	C	C	0.27	0.74	0.07	0.12
Iceland	T3	PS	–	clinker production	NO	NO	–	NO	–	NO
Ireland	T3	PS	3.14	clinker production	3 513	0.55	–	0.74	–	NO
Italy	T2	CS, PS	1.81	Clinker production	14 820	0.52	0.44	0.74	0.14	0.10
Japan	CS, T2	CS	2.11	Production of clinker	50 979	0.51	0.46	0.43	0.02	0.000
Kazakhstan	T1, T2	D	0.98		7 394	0.53	0.17	0.77	0.01	0.10
Latvia	T1, T2, T3	D, PS	4.70	(produced clinker)	1 074	0.51	–	NA, NO	0.01	C
Liechtenstein	NA	NA	–	Production	NO	NO	–	NO	–	NO
Lithuania	T1, T2	CS, D, PS	2.52	Clinker production	952	0.54	0.01	0.78	0.04	0.15
Luxembourg	CS, T2	CS, PS	3.52	clinker production	747	0.50	–	NO	0.59	0.15
Malta	NA	NA	–	(not occuring)	NO	NO	–	NO	–	NO
Monaco	NA	NA	–	NO	NO	NO	–	NO	–	NO
Netherlands	CS, T1, T3	CS, D, PS	0.12	clinker production	433	0.51	0.12	0.44	0.04	0.048
New Zealand	CS, T1	CS, D	0.53	Clinker produced	C	C	0.14	0.73	–	NA
Norway	T1, T3	CS, D, PS	1.40	Production quantity	1 429	0.51	0.40	0.77	0.01	0.47
Poland	T1, T2	CS, D	1.85	Clinker production	14 221	0.54	0.35	0.74	0.12	0.16
Portugal	T1, T3	OTH	3.34		4 294	0.52	0.61	0.42	0.23	0.080
Romania	CS, OTH, T2, T3	CS, D, PS	3.02	clinker production	6 696	0.52	0.75	0.75	0.04	0.13
Russian Federation	T1, T2	CS, D	0.90	Clinker production	38 040	0.53	0.39	0.77	0.05	0.086
Slovakia	T2, T3	PS	3.11	Cement clinker	2 696	0.50	1.21	0.78	0.04	0.42
Slovenia	T2, T3	CS, D	2.57	Clinker produced	873	0.52	0.35	0.75	0.07	0.13
Spain	T1, T2, T3	CS, D, PS	2.89	Clinker production	18 460	0.52	0.44	0.71	0.14	0.10
Sweden	T3	CS, D, PS	3.10	Production of clinker	2 958	0.54	0.75	0.75	0.03	NE
Switzerland	CR, T2, T3	CS, D, OTH, PS	3.74	clinker production	3 239	0.54	0.10	C	0.02	0.048
Turkey	T1, T2	CS, D	7.11	Clinker Production	70 344	0.53	0.53	0.70	0.12	0.15
Ukraine	T1, T2, T3	CS, D	1.10	clinker production	6 850	0.54	0.68	0.77	0.07	0.18
United Kingdom of Great Britain and Northern Ireland (KP)	T3	CS	0.94	Clinker production	7 734	0.56	0.23	0.45	0.08	0.16
United Kingdom of Great Britain and Northern Ireland (Convention)	T3	CS	0.94	Clinker production	7 734	0.56	0.23	0.45	0.08	0.16
United States of America	T1, T2, T3	D	0.60	Clinker Production	77 500	0.52	0.20	0.75	0.02	0.42

[a] The national total includes indirect CO_2 emissions from the atmospheric oxidation of CH_4, CO and NMVOCs for the following Parties: Canada, Czechia, Denmark (KP), Denmark (Convention), European Union (KP), European Union (Convention), Finland, Japan, Latvia, Netherlands, Portugal and Switzerland.

[b] The CRF requests Parties to specify the activity data used (e.g. cement or clinker) for estimating the emissions from cement production. The descriptions included in this column are as reported in the CRF by Parties.

[c] Source of default emission factors: 2006 IPCC Guidelines for National Greenhouse Gas Inventories Volume 3 Chapter 2 Mineral Industry Emissions. Lime production table 2.4; glass production section 2.4.1.2.

Table 2.2

Chemical industry - CO_2 and N_2O (2018)

	CO_2					N_2O						
	Methods and EF used		Ammonia production			Methods and EF used		Nitric acid production			Adipic acid production	
	Methods	EF	Share of national total[a] (%)	Activity data (production) (kt)	CO_2 IEF (t/t)	Methods	EF	Share of national total[a] (%)	Activity data (production) (kt)	N_2O IEF (t/t)	Share of national total[a] (%)	N_2O IEF (t/t)
IPCC default EF[b]					1.666 to 3.273					0.002 to 0.009		0.3
Australia	T2, T3	CS, D	0.43	2 564	1.1	T3	CS	0.33	1 669	0.004	–	NO
Austria	T1, T2, T3	D, PS	0.45	405	1.2	T3	PS	0.07	430	0.000	–	NO
Belarus	T1, T2	CS, D	2.41	1 096	2.0	T1, T2	D	0.41	253	0.005	–	NO
Belgium	T3	D, PS	0.97	975	1.3	T3	PS	0.21	2 042	0.000	–	NO
Bulgaria	T2	CS, PS	1.36	C	C	T3	PS	0.20	C	C	–	NO
Canada	T1, T2	CS, D, OTH	0.33	4 163	1.3	T1, T2, T3	CS, D, PS	0.15	947	0.004	–	NO
Croatia	T3	PS	2.16	397	2.0	T3	PS	0.21	289	0.001	–	NO
Cyprus			–	NO	NO			–	NO	NO	–	NO
Czechia	T1	CS, D, PS	0.46	179	3.3	CS, T3	CS, PS	0.09	579	0.001	–	NO
Denmark (KP)	T2	PS	–	NO	NO			–	NO	NO	–	NO
Denmark (Convention)	T2	PS	–	NO	NO			–	NO	NO	–	NO
Estonia			–	NO	NO			–	NO	NO	–	NO
European Union (KP)			0.56	NE	NE			0.08	NE	NE	0.01	NE
European Union (Convention)			0.56	NE	NE			0.08	NE	NE	0.01	NE
Finland	CS, T2, T3	CS, PS	–	NO	NO	T3	PS	0.37	650	0.001	–	NO
France (KP)	T1, T2, T3	CS, D, PS	0.31	1 112	1.2	T2, T3	CS, D, PS	0.13	1 961	0.001	0.01	C
France (Convention)	T1, T2, T3	CS, D, PS	0.30	1 112	1.2	T2, T3	CS, D, PS	0.12	1 961	0.001	0.01	C
Germany	T1, T2, T3	CS, D, PS	0.48	3 030	1.8	T3	PS	0.04	2 669	0.000	0.03	C
Greece	T1, T1a	CS	0.27	148	1.7	CS	CS	0.02	190	0.000	–	NO
Hungary	T3	D, PS	1.80	20 239	0.056	T3	PS	0.06	790	0.000	–	NO
Iceland			–	NO	NO			–	NO	NO	–	NO
Ireland			–	NO	NO			–	NO	NO	–	NO
Italy	D, T2, T3	CR, PS	0.16	611	1.8	T3	D, PS	0.01	447	0.000	0.01	0.002
Japan	CS, T1, T2, T3	CS, D	0.12	798	1.8	CS, T1, T2	CS, PS	0.03	328	0.003	0.00	C
Kazakhstan	T1, T2	CS, D	0.11	210	2.1	T1	D	0.05	295	0.002	–	NO
Latvia			–	NO	NO			–	NO	NO	–	NO
Liechtenstein			–	NO	NO			–	NO	NO	–	NO
Lithuania	T3	CS	9.02	948	2.1	T3	PS	0.87	1 050	0.001	–	NO
Luxembourg			–	NO	NO			–	NO	NO	–	NO
Malta			–	NO	NO			–	NO	NO	–	NO
Monaco			–	NO	NO			–	NO	NO	–	NO
Netherlands	CS, T1, T3	CS, D	2.00	C	C	T1, T2	CS, PS	0.15	C	C	–	NO
New Zealand	T1, T2	CS, D	0.02	154	1.4			–	NO	NO	–	NO
Norway	T2	CS, D, PS	0.73	414	1.4	CS, T2, T3	PS	0.38	1 981	0.000	–	NO
Poland	T1, T2	CS, D	0.84	2 535	1.4	T2	CS	0.12	2 310	0.001	–	NA, NO
Portugal	NO	NO	–	C	NO	D	PS	0.07	C	C	–	NO
Romania	D, T1, T3	D, PS	0.86	524	2.3	T2, T3	D, PS	0.20	C	C	–	NO
Russian Federation	T1, T3	CS, D	1.48	18 077	2.2	T1	D	0.24	8 906	0.002	–	NO
Slovakia	T2, T3	CS, PS	1.82	517	2.0	T3	D, PS	0.24	575	0.001	–	NO
Slovenia	D, T3	CS, D	–	NO	NO			–	NO	NO	–	NO
Spain	T1, T3	D, PS	0.11	531	1.3	T1, T3	D, PS	0.04	716	0.001	–	NO
Sweden	T1, T3	PS	–	NO	NO	T2, T3	CS, PS	0.06	269	0.000	–	NO
Switzerland	T2	PS	–	C	C	T2, T3	PS	0.00	C	C	–	NO
Turkey	T1, T2	CS, D	0.20	C	C	T1	D	0.35	1 066	0.006	–	NO
Ukraine	T1, T3	CS, D	0.38	976	2.0	T2, T3	CS, D	0.40	1 011	0.005	–	NO
United Kingdom of Great Britain and Northern Ireland (KP)	CS, T1, T3	CS, D	0.29	876	1.5	T1, T3	CS, D	0.01	1 082	0.000	–	NO
United Kingdom of Great Britain and Northern Ireland (Convention)	CS, T1, T3	CS, D	0.29	876	1.5	T1, T3	CS, D	0.01	1 082	0.000	–	NO
United States of America	CS, T1	CS, D, OTH	0.20	14 370	1.3	CS, T1	CS, D	0.14	7 780	0.004	0.15	C

[a] The national total includes indirect CO_2 emissions from the atmospheric oxidation of CH_4, CO and NMVOCs for the following Parties: Canada, Czechia, Denmark (KP), Denmark (Convention), European Union (KP), European Union (Convention), Finland, Japan, Latvia, Netherlands, Portugal and Switzerland.

[b] Source of default emission factors: 2006 IPCC Guidelines for National Greenhouse Gas Inventories Volume 3 Chapter 3 Chemical Industry Emissions. Ammonia table 3.1; nitric acid table 3.3; adipic acid table 3.4.

Table 2.3

Metal industry - CO_2 (2018)

	Methods and EF used		Iron and steel[a]					Aluminium production		
				Steel		Pig iron				
	Methods	EF	Share of national total[b]	Activity Data (production)	CO_2 IEF	Activity Data (production)	CO_2 IEF	Share of national total[b]	Activity Data (production)	CO_2 IEF
			(%)	(kt)	t/t	(kt)	t/t	(%)	(kt)	t/t
IPCC default EF[c]					1.46 (BOF) 0.08 (EAF) 1.72 (OHF)		1.35			1.6 (Prebake) 1.7 (Soderberg)
Australia	T2, T3	CS	–	C	NA, NO	NO	NO	0.40	1 570	1.4
Austria	T1, T3	CS, D, PS	12.03	6 176	1.5	5 263	IE, NO	0.01	C	C
Belarus	T1	D	0.22	2 573	0.080	NO	NO	–	NO	NO
Belgium	CS, T3	PS	3.48	7 925	0.51	4 754	IE, NA	–	NO	NO
Bulgaria	T2	CS, PS	0.06	684	0.052	NO	NO	–	C	NO
Canada	T2, T3	CS, PS	1.28	13 444	0.069	6 681	1.2	0.67	2 924	1.7
Croatia	OTH, T3	PS	0.04	136	0.063	NO	NO	–	NO	NO
Cyprus			–	NO	NO	NO	NO	–	NO	NO
Czechia	CS, T1, T2	CS, D, PS	5.40	5 034	IE, NA	4 028	IE, NA	–	NO	NO
Denmark (KP)	T1	D	–	NO	NO	NO	NO	–	NO	NO
Denmark (Convention)	T1	D	–	NO	NO	NO	NO	–	NO	NO
Estonia	T3	PS	–	NO	NO	NO	NO	–	NO	NO
European Union (KP)			1.52	NE	NE	NE	NE	0.11	NE	NE
European Union (Convention)			1.53	NE	NE	NE	NE	0.08	NE	NE
Finland	CS, T2, T3	CS	3.64	4 074	0.50	NO	IE, NO	–	NO	NO
France (KP)	T1, T2, T3	CS, D, PS	0.58	15 449	0.080	10 471	0.045	0.14	383	1.6
France (Convention)	T1, T2, T3	CS, D, PS	0.57	15 449	0.080	10 471	0.045	0.14	383	1.6
Germany	T1, T2, T3	CS, D	2.35	42 435	0.47	27 834	IE, NO	0.08	529	1.4
Greece	CS, T1	CS, D, PS	0.10	1 467	0.062	NO	NO	0.31	185	1.6
Hungary	T3	PS	2.22	1 989	0.12	1 355	1.6	–	NO	NO
Iceland	T3	PS	–	NO	NA, NO	NO	NO	27.05	879	1.5
Ireland			–	NO	NO	NO	NO	–	NO	NO
Italy	T2	CR, CS, PS	0.34	24 503	0.042	4 845	0.083	–	NO	NO
Japan	T2	OTH	0.46	48	3.7	12 480	0.44	–	NA	IE, NA
Kazakhstan	T1, T2	CS, D	1.84	3 973	0.048	3 154	1.8	0.33	258	5.1
Latvia			–	NO	NO	NO	NO	–	NO	NO
Liechtenstein			–	NO	NO	NO	NO	–	NO	NO
Lithuania	T2	D	0.01	NO	NO	NO	NO	–	NO	NO
Luxembourg	CS, T1, T2	CS, PS	1.06	2 228	0.050	NO	NO	–	NO	NO
Malta			–	NO	NO	NO	NO	–	NO	NO
Monaco			–	NO	NO	NO	NO	–	NO	NO
Netherlands	T1a, T2	CS, D	0.01	7 027	0.003	NA	IE, NO	0.00	29	0.000
New Zealand	T2, T3	CS	2.15	C	C	NA	NA, NO	0.70	341	1.6
Norway	T2, T3	CS, PS	0.05	572	0.049	NO	NO	3.80	1 296	1.5
Poland	T1, T2, T3	CS, D	0.52	IE	IE	4 788	0.16	–	NO	NA, NO
Portugal	T1, T3	D, PS	0.09	2 254	0.028	NO	NO	–	NO	NO
Romania	D, T3	CS, D, PS	3.22	3 701	1.0	1 979	IE, NO	0.29	211	1.6
Russian Federation	T1, T2, T3	CS, D, PS	4.25	74 383	0.11	51 797	1.4	0.28	C	C
Slovakia	T1, T2, T3	D, PS	9.66	4 642	0.90	0.11	IE, NO	0.64	174	1.6
Slovenia	T1, T2	D, PS	0.34	667	0.090	NO	NA, NO	0.76	81	1.7
Spain	T1, T2, T3	CS, D, PS	0.48	14 794	0.047	C	C	0.18	C	C
Sweden	T2, T3	PS	3.82	1 839	C, NA	2 915	0.53	0.36	125	1.5
Switzerland	CR, T2, T3	CS, D, PS	0.03	1 291	0.009	NO	NO	–	NO	NO
Turkey	T1, T2, T3	CS, D	2.41	37 533	0.27	4 114	IE, NO	0.02	73	1.5
Ukraine	T1, T3	CS, D	11.76	20 994	0.13	20 531	1.7	–	NO	NO
United Kingdom of Great Britain and Northern Ireland (KP)	T1, T2	CS	0.49	7 336	0.014	5 588	0.17	0.01	44	1.5
United Kingdom of Great Britain and Northern Ireland (Convention)	T1, T2	CS	0.49	7 336	0.014	5 588	0.17	0.01	44	1.5
United States of America	T1, T2	CS, D, OTH	0.64	58 904	0.098	24 058	0.33	0.02	897	1.6

[a] The national total includes indirect CO_2 emissions from the atmospheric oxidation of CH_4, CO and NMVOCs for the following Parties: Canada, Czechia, Denmark (KP), Denmark (Convention), European Union (KP), European Union (Convention), Finland, Japan, Latvia, Netherlands, Portugal and Switzerland.

[b] In addition to data reported here, CO_2 emission estimates from direct reduced iron (2.C.1.c) were reported by Russian Federation and United States of America; CO_2 emission estimates from sinter (2.C.1.d) were reported by Belgium, European Union (KP), European Union (Convention), France (KP), France (Convention), Hungary, Kazakhstan, Poland, Russian Federation, Spain, Turkey, United Kingdom (KP), United Kingdom (Convention) and United States of America; CO_2 emission estimates from pellet (2.C.1.e) were reported by European Union (KP), European Union (Convention), Kazakhstan, Russian Federation, Sweden, Turkey and United States of America; CO_2 emission estimates from other (2.C.1.f) were reported by Austria, Belgium, Canada, Croatia, Czechia, European Union (KP), European Union (Convention), France (KP), France (Convention), Lithuania, Poland, Slovakia, Spain, Ukraine and United States of America.

[c] Source of default emission factors: 2006 IPCC Guidelines for National Greenhouse Gas Inventories Volume 3 Chapter 4 Metal Industry Emissions. Iron and steel table 4.1; Aluminium table 4.10.

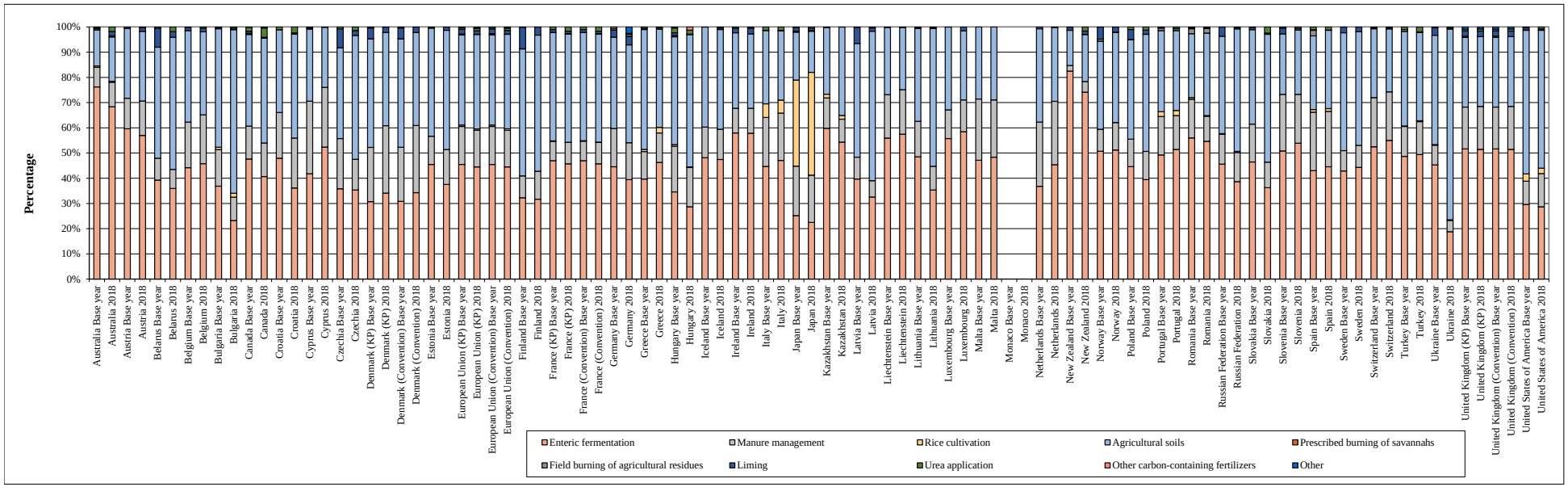
Table 2.4

HFCs, PFCs, SF_6 and NF_3 (2018)

	Metal industry						Electronic industry						Product uses as substitutes for ODS				Other product manufacture and use			
	HFCs		PFCs		SF_6		PFCs		SF_6		NF_3		HFCs		PFCs		HFCs		PFCs	
	Methods	EF	Methods	EF	Methods	EF	Methods	EF	Methods	EF	Methods	EF	Methods	EF	Methods	EF	Methods	EF	Methods	EF
IPCC default EF																				
Australia			T2, T3	CS									M	CS, D						
Austria					T2	D	T3	PS	T3	PS	T3	PS	T2	D						
Belarus																				
Belgium							T2, T3	D, PS	T2, T3	D, PS	T2, T3	D, PS	T2	CS, D, PS	T2	CS, D, PS			NO	NO
Bulgaria									NO	NO	NO	NO	T2	D	NO	NO	NO	NO	NO	NO
Canada			T1, T2, T3	CS, D, OTH	T3	D	T2	D	T2	D	T2	D	T2	CS, D	T2	D			T2	D
Croatia													T2	D						
Cyprus													CS, T2	CS, D						
Czechia							T2	D	T2	D	T2	D	D, T1, T2	CS, D	D, T2	CS, D				
Denmark (KP)													T2	D	T2	D				
Denmark (Convention)													T1, T2	D	T2	D				
Estonia													T2	CS						
European Union (KP)																				
European Union (Convention)																				
Finland													T2	CS, D	T2	D				
France (KP)			T2, T3	CS, PS			T2	CS	T2	CS	T2	CS	T1, T2	CS, D, PS			T2	OTH	T2	CS, D
France (Convention)			T2, T3	CS, PS			T2	CS	T2	CS	T2	CS	T1, T2	CS, D, PS			T2	OTH	T2	CS, D
Germany	D	D	T3	CS	D	D	CS	PS	CS, D	CS, PS	CS	PS	CS, T2	CS, D	T2	CS, D	CS	CS		CS
Greece			T3	PS									CS, T2	D	T2	D				
Hungary													T1, T2	CS, D	T2	D			NO	NO
Iceland			T2	D									T1a, T2	D	T2	D				
Ireland							T2	CS	T2	CS	T2	CS	T1, T2, T3	CS						
Italy	T2	PS					T2	CS	T2	CS	T2	CS	T2	CS, D, PS						
Japan		CS			T2	OTH	T2	CS, D	T2	CS, D	T2	CS, D	CS	CS, D	CS	CS				
Kazakhstan			T1	D									T1	D						
Latvia													T1a, T2	CS, D, OTH						
Liechtenstein													CS	CS	CS	CS				
Lithuania									T3	PS	T2	PS	T1a, T1b, T2	CS, D, PS						
Luxembourg													T1, T2	CS, M, PS			T3	PS		
Malta													CS, T1, T2	CS, D					CS	CS
Monaco													CS, T2	CS, D, OTH						
Netherlands			T2	CS									T2	CS						
New Zealand			T2	D									T1a, T2	CS, D	CS, T2	CS			T1	D
Norway									T2	CS			T2	D	T1, T2	CS, D				
Poland									NO	NO	NO	NO	T1a, T1b, T2	D	T2	D				
Portugal	NO	NO	NO	NO	NO	NO							T2	D	T2	D	NO	NO	NO	
Romania			T2	D, PS									T2	D						
Russian Federation			T2, T3	D, PS			T2	D	T2	D	T2	D	T1, T2	CS, D	T1	D				
Slovakia			T2	PS									T1a, T2	CS, D						
Slovenia			T3	D, PS									T1, T2	CS, D	NO	NO				
Spain			T2	D									T1a, T2	CS, D	T1a, T2	CS, D				
Sweden	T2	D	T2	D									T1, T2	CS, D, PS	T2	CS, D				
Switzerland							T2	D	T2	D	T2	D	T1a, T2	CS, D	T2	CS	T1a, T3	D, PS	T1a, T3	D, PS
Turkey																				
Ukraine																				
United Kingdom of Great Britain and Northern Ireland (KP)	T2	PS	T2	PS	T2	PS					T2	D	CS, T1a, T2	CS, OTH					T2, T3	CS, D
United Kingdom of Great Britain and Northern Ireland (Convention)	T2	PS	T2	PS	T2	PS					T2	D	CS, T1a, T2	CS, OTH					T2, T3	CS, D
United States of America	M, T3	CS, M			M, T3	CS, M	M, T2	CS, M	M, T2	CS, M	M, T2	CS, M	M, T2	CS, M	M, T2	CS, M				

Figure 3.1

Contribution of subsectors to total GHG emissions in the Agriculture sector[a, b]



[a] In accordance with the UNFCCC reporting guidelines on annual inventories of Annex I Parties the year 1990 should be the base year for the estimation and reporting of inventories. However, in accordance with decisions 9/CP.2, 11/CP.4, and 7/CP.12 some Parties with economies in transition use base years other than 1990: Bulgaria (1988), Croatia (1990), Hungary (average of 1985 to 1987), Poland (1988), Romania (1989) and Slovenia (1986).

[b] Indirect CO_2 emissions are excluded from the totals in this graph.

Table 3.1

Enteric fermentation - CH_4 (2018)

	Share of national total[a]	Methods and EF used		Cattle									Sheep				Swine			
				Activity data (population size)			Option A		Option B			Option C	Activity data (population size)			CH_4 IEF	Activity data (population size)			CH_4 IEF
		Methods	EF	CRF	FAO[b]	Difference	Dairy cattle	Non-dairy cattle	Mature dairy cattle	Other mature cattle	Growing cattle	Other	CRF	FAO[b]	Difference		CRF	FAO[b]	Difference	
	(%)			(thousands of head)		(%)	CH_4 IEF (kg/head/yr)						(thousands of head)		(%)	(kg/head/yr)	(thousands of head)		(%)	(kg/head/yr)
IPCC default EF[c,d]							46-128	27-60								5-8				1.0-1.5
Australia	9.26	CS, T1, T2	CS, D	27 843	26 396	-5.20						56	74 083	70 067	-5.42	6.7	2 563	2 534	-1.14	1.6
Austria	5.22	T1, T2	CS, D	1 913	1 943	1.60	136	59					406	401	-1.20	8.0	2 777	2 820	1.57	1.5
Belarus	8.80	T1, T2	CS, D	4 359	4 342	-0.41	114	52					89	88	-1.30	8.0	2 993	2 841	-5.10	1.5
Belgium	3.85	T1, T2	CS, D	2 421	2 398	-0.96	149	50					130	87	-33.32	8.0	6 344	6 209	-2.12	1.5
Bulgaria	2.58	T1, T2	CS, D	533	540	1.28			108	77	56		1 333	1 317	-1.25	7.4	624	593	-4.92	1.5
Canada	3.31	T1, T2	CS, D	11 990	11 565	-3.54	140	71					945	829	-12.27	8.0	14 063	14 170	0.76	1.5
Croatia	4.13	T1	D	414	414	0.00			117	57	57		636	636	0.00	8.0	1 080	1 049	-2.90	1.5
Cyprus	2.97	T1, T2	CS, D	71	71	0.07	124	57					311	330	6.19	8.0	362	348	-3.97	1.5
Czechia	2.37	T1, T2	CS, D	1 416	1 416	0.00	153	58					219	219	0.00	8.0	1 557	1 557	0.00	1.5
Denmark (KP)	7.81	T1, T2	CS, D, OTH	1 540		–	161	40					205		–	6.7	12 781		–	1.1
Denmark (Convention)	7.59	T1, T2, T3	CS, D, OTH	1 542	1 540	-0.12	161	40					302	144	-52.40	7.4	12 781	12 781	0.00	1.1
Estonia	2.70	D, T1, T2	CS, D, OTH	252	252	0.00			153	60	38		86	73	-14.80	8.0	290	290	0.00	1.1
European Union (KP)	4.58			92 154		–	131	51					100 503		–	8.1	144 974		–	1.2
European Union (Convention)	4.58			92 073	88 453	-3.93	131	51					99 845	98 438	-1.41	8.1	144 934	150 321	3.72	1.2
Finland	3.68	CS, OTH, T1, T2	CS, D, OTH	882	882	0.00	155	55					155	155	0.00	8.4	1 041	1 089	4.60	1.0
France (KP)	7.69	T2, T3	CS	18 613		–	123	53					7 049		–	13	13 298		–	0.74
France (Convention)	7.59	T1, T2, T3	CS, D	18 688	18 547	-0.76	123	53					7 052	7 042	-0.13	13	13 370	13 325	-0.34	0.74
Germany	2.92	T1, T2, T3	CS, D	11 949	11 949	0.00	138	50					1 846	1 570	-14.95	6.4	22 019	26 445	20.10	1.2
Greece	3.91	T1, T2	CS, D	538	613	13.91	126	63					8 693	8 834	1.62	9.5	693	710	2.47	1.5
Hungary	3.24	T1, T2	CS, D	879	870	-0.97	129	55					1 146	1 146	0.03	8.0	2 865	2 870	0.17	1.5
Iceland	6.20	T1, T2	CS, D	82	81	-0.23			109	74	35		658	432	-34.36	8.7	40	29	-28.00	1.5
Ireland	18.94	CS, T1, T2	CS, D	7 244	7 349	1.45	116	45					5 140	5 109	-0.59	5.6	1 597	1 622	1.56	1.3
Italy	3.32	T1, T2	CS, D	5 923	5 923	0.00	152	48					7 179	7 179	0.00	7.1	8 492	8 492	0.00	1.5
Japan	0.60	CS, T1	CS, D	3 835	3 842	0.19	100	60					20	15	-25.15	8.0	9 157	9 189	0.35	1.4
Kazakhstan	4.96	T1, T2	CS, D	7 912	7 151	-9.62	102	52					18 911	16 416	-13.19	6.6	998	799	-20.00	1.0
Latvia	7.25	T1, T2	CS, D, OTH	395	406	2.64			143	81	29		107	112	4.57	8.0	305	321	5.14	1.5
Liechtenstein	7.52	T2	CS	5.9	5.9	0.00			138	107	43		4.0	4.0	0.00	8.8	1.8	1.8	0.00	1.1
Lithuania	7.47	T1, T2	CS, D, OTH	679	677	-0.25	127	57					178	170	-4.92	10	592	612	3.37	1.3
Luxembourg	3.83	T1, T2	CS, D	196	196	0.00						81	7.2	8.7	19.84	7.8	81	92	12.60	1.5
Malta	1.45	T1, T2	CS, D	14	14	0.00						75	13	13	0.00	6.8	36	36	0.00	1.5
Monaco	–			NO		–	NO	NO					NO		–	NO	NO		–	NO
Netherlands	4.39	T1, T2, T3	CS, D	3 844	3 850	0.18			135	78	34		948	957	0.90	8.0	12 407	12 419	0.10	1.5
New Zealand	35.43	T1, T2	CS, D	10 104	10 107	0.03	85	58					27 246	27 296	0.18	12	279	287	2.87	1.1
Norway	4.41	T1, T2	CS, D	862	882	2.39			144	86	56		1 366	2 403	75.89	12	832	817	-1.73	1.5
Poland	3.16	T1, T2	CS, D	6 201	6 201	0.00						80	277	277	0.00	8.0	11 828	11 828	0.00	1.5
Portugal	5.19	T1, T2	CS, D	1 659	1 632	-1.60	131	58					2 227	2 208	-0.86	9.4	2 172	2 205	1.50	1.2
Romania	9.34	T2	CS	1 958	2 011	2.70	125	64					10 176	9 982	-1.91	18	3 925	4 406	12.25	1.5
Russian Federation	2.21	CS, T1, T2	CS, D	18 694	18 294	-2.14	122	64					23 956	22 347	-6.72	8.0	23 675	23 076	-2.53	1.2
Slovakia	2.29	T1, T2	CS, D	439	440	0.22	121	62					351	365	4.05	10.8	627	614	-2.02	1.5
Slovenia	5.30	T1, T2	CS, D	477	480	0.59						75	82	109	31.87	8.0	259	257	-0.73	1.5
Spain	5.29	CS, T2	CS	6 618	6 511	-1.62	108	74					15 853	15 853	0.00	7.6	30 474	30 804	1.08	0.80
Sweden	5.81	CS, T1	CS, D	1 507	1 435	-4.72	140	50					587	360	-38.67	8.0	1 393	1 471	5.59	1.5
Switzerland	7.10	T2, T3	CS, M	1 543	1 543	0.00			138	107	38		403	343	-14.76	8.9	1 498	1 418	-5.35	1.0
Turkey	6.15	T1, T2	CS, D	17 043	15 944	-6.45	82	48					35 195	33 678	-4.31	5.1	1.6	1.4	-16.81	1.0
Ukraine	2.45	T1, T2	CS, D	3 630	3 531	-2.74			110	69	46		922	727	-21.09	8.7	6 321	6 110	-3.35	1.5
United Kingdom of Great Britain and Northern Ireland (KP)	4.55	T1, T3	CS, D	9 726		–	123	55					34 503		–	4.6	5 012		–	1.5
United Kingdom of Great Britain and Northern Ireland (Convention)	4.54	T1, T3	CS, D	9 726	9 892	1.70	123	55					34 503	33 781	-2.09	4.6	5 012	5 055	0.86	1.5
United States of America	2.66	M, T1, T2	CS, D, M	102 070	94 298	-7.61						67	5 265	5 265	0.00	8.0	73 793	74 550	1.03	1.5

[a] The national total includes indirect CO_2 emissions from the atmospheric oxidation of CH_4, CO and NMVOCs for the following Parties: Canada, Czechia, Denmark (KP), Denmark (Convention), European Union (KP), European Union (Convention), Finland, Japan, Latvia, Netherlands, Portugal and Switzerland.

[b] Source of international statistics: FAOSTAT data, downloaded on 24 May 2020 from http://www.fao.org/faostat/en/#data/QA.

[c] Source of default emission factors: 2006 IPCC Guidelines for National Greenhouse Gas Inventories Volume 4 Chapter 10: Emissions from Livestock and Manure Management. Dairy and Other cattle table 10.11; Sheep and Swine table 10.10.

[d] For dairy and other cattle, 2006 IPCC default emission factors (in kg CH_4/head/year) are provided by regions as shown below (see footnote c for source reference).

	Western Europe	Eastern Europe	Oceania	Latin America	Asia	Africa and Middle East	Indian Subcontenent
Dairy cattle	117	99	90	72	68	46	58
Other cattle	57	58	60	56	47	31	27

Table 3.2

Manure management - CH_4 (2018)

	Share of national total[a]	Methods and EF used		Cattle						Sheep	Swine
				Option A		Option B			Option C		
				Dairy cattle	Non-dairy cattle	Mature dairy cattle	Other mature cattle	Growing cattle	Other		
	(%)	Methods	EF	CH_4 IEF (kg/head/yr)							
IPCC default EF[b]				1-112	0 to 26					0.10 to 0.37	0 to 45
Australia	1.12	CR, CS, T2, T3	CS, D						5.8	0.34	23
Austria	0.69	T1, T2	CS, D	17	6.2					0.31	1.1
Belarus	0.72	T1, T2	CS, D	5.9	2.2					0.19	3.2
Belgium	1.06	T1, T2	CS, D	30	3.0					0.19	4.5
Bulgaria	0.21	T1, T2	CS, D			2.9	2.0	1.4		0.22	4.4
Canada	0.53	T1, T2	CS, D	38	3.7					0.28	4.7
Croatia	1.69	T2	CS, D			39	11	11		0.22	6.5
Cyprus	0.57	T1, T2	D	10	4.4					0.28	3.5
Czechia	0.42	T1, T2	CS, D	14	3.6					0.19	6.3
Denmark (KP)	4.60	CS, T2	CS, D	49	14					0.20	3.5
Denmark (Convention)	4.44	CS, T1, T2	CS, D	48	14					0.20	3.5
Estonia	0.68	D, T1, T2	CS, D			33	6.3	5.0		0.19	5.5
European Union (KP)	0.98			20	4.9					0.33	5.0
European Union (Convention)	0.98			20	4.9					0.32	5.0
Finland	0.80	T2	CS	29	6.3					0.25	3.4
France (KP)	0.86	T2	CS	11	3.2					0.32	4.1
France (Convention)	0.86	T2	CS	11	3.2					0.32	4.2
Germany	0.71	T2	CS, D	21	7.5					0.28	4.1
Greece	0.68	T1, T2	CS, D	14	3.7					1.0	16
Hungary	1.03	T1, T2	CS, D	31	10					0.29	3.7
Iceland	1.17	T1, T2	CS, D			31	3.0	9.3		0.73	6.0
Ireland	2.34	T1, T2	CS, D	10	4.3					0.49	6.6
Italy	0.81	T1, T2	CS, D	16	7.1					0.21	8.2
Japan	0.19	CS, T1	CS, D	60	2.2					0.28	0.52
Kazakhstan	0.19	T1, T2	CS, D	4.6	0.98					0.10	4.0
Latvia	0.77	T1, T2	CS, D			16	2.0	1.1		0.19	2.4
Liechtenstein	1.48	T2	D			29	19	5.8		1.2	4.6
Lithuania	1.10	T1, T2	CS, D	10.2	6.8					0.41	3.7
Luxembourg	0.57	T1, T2	CS, D						10	0.15	5.0
Malta	0.21	T1, T2	CS, D						7.4	0.28	0.50
Monaco	–			NO	NO					NO	NO
Netherlands	2.02	T1, T2	CS, D			39	6.9	7.8		0.19	5.5
New Zealand	1.89	T1, T2	CS, D	7.9	0.78					0.13	5.9
Norway	0.65	T1, T2	CS, D			23	14.3	4.7		0.61	2.7
Poland	0.36	T1, T2	CS, D						5.6	0.19	1.6
Portugal	1.08	T2	CS, D	25	1.9					0.35	7.7
Romania	1.19	T1, T2	CS, D	6.8	2.5					0.55	9.4
Russian Federation	0.27	CS, T1, T2	CS, D	5.3	4.2					0.19	5.7
Slovakia	0.25	T1, T2	CS, D	8.3	2.4					0.40	3.1
Slovenia	1.44	T1, T2	CS, D						17	0.24	3.9
Spain	2.03	T1, T2	CS, D	35	4.0					0.27	6.8
Sweden	0.51	T1, T2	CS, D	9.1	3.6					0.19	1.4
Switzerland	1.60	T2, T3	CS, M			28	18	5.2		1.2	4.1
Turkey	0.75	T1	D	21	1.0					0.13	3.9
Ukraine	0.29	CS, T1, T2	CS, D			4.0	2.7	1.3		0.24	2.6
United Kingdom of Great Britain and Northern Ireland (KP)	0.90	T1, T2, T3	CS, D	37	7.9					0.12	5.2
United Kingdom of Great Britain and Northern Ireland (Convention)	0.90	T1, T2, T3	CS, D	37	7.9					0.12	5.2
United States of America	0.92	M, T1, T2	CS, D, M						14	0.54	12

[a] The national total includes indirect CO_2 emissions from the atmospheric oxidation of CH_4, CO and NMVOCs for the following Parties: Canada, Czechia, Denmark (KP), Denmark (Convention), European Union (KP), European Union (Convention), Finland, Japan, Latvia, Netherlands, Portugal and Switzerland.

[b] Source of default emission factors: 2006 IPCC Guidelines for National Greenhouse Gas Inventories Volume 4 Chapter 10 Emissions from Livestock and Manure Management. Dairy, Other cattle and Swine table 10.14; Sheep table 10.15. Default emission factors are provided according to climate regions (cool, temperate, warm), as shown below.

Default IPCC emission factors according to climate regions[b]

	Dairy cattle			Other cattle			Swine		
	cool	temperate	warm	cool	temperate	warm	cool	temperate	warm
North America	48-58	63-98	105-112	1	2	2	10-23	13-39	22-45
Western Europe	21-29	34-75	83-92	6-8	10-21	24-26	6-12	9-27	19-33
Eastern Europe	11-15	20-37	42-46	6-8	9-19	21-23	3-5	4-12	10-17
Oceania	23-26	27-30	31	1	2	2	11-22	13-24	13-24
Latin America	1	1	2	1	1	1	1	1	2
Africa	1	1	1	0	1	1	0-1	1	1-2
Middle East	2	2	2-3	1	1	1	1-2	2-5	5-6
Asia	9-12	13-26	28-31	1	1	1	2	3-6	6-7
Indian Subcontinent	5	5	5-6	2	2	2	2-3	3-5	6

	Sheep		
	cool	temperate	warm
Developed countries	0.19	0.28	0.37
Developing countries	0.10	0.15	0.20

Table 3.3

Manure management - N_2O (2018)

	N excretion rates						Share of national total[a]	Methods and EF used		N_2O IEF				
	Option A		Option B			Option C								
	Dairy cattle	Non-dairy cattle	Mature dairy cattle	Other mature cattle	Growing cattle	Other				Dairy cattle	Non-dairy cattle	Sheep	Swine	Other livestock
	(kg N / head / year)						(%)	Methods	EF	(kg N_2O/head/yr)				
IPCC default EF[b]	0.35 to 0.70	0.31 to 0.79												
Australia						46	0.20	CS, T2, T3	D			NA	0.079	0.004
Austria	106	45					0.56	T2	CS	0.66	0.38	0.067	0.046	0.003
Belarus	77	37					1.12	T1	D	0.50	0.22	0.073	0.082	0.002
Belgium	121	55					0.57	T2	D	0.71	0.56	0.018	0.031	0.001
Bulgaria			98	65	53		0.82	T1, T2	D			0.039	0.016	0.017
Canada	122	48					0.56	T1	D	0.92	0.70	0.045	0.015	0.016
Croatia			99	64	36		0.57	T1	CS, D			0.021	0.011	0.004
Cyprus	96	39					0.77	T1	D	0.72	0.29	0.098	0.036	0.015
Czechia	141	70					0.40	T2	CS, D	0.70	0.37	0.055	0.071	0.004
Denmark (KP)	155	42					1.52	T2	D	1.0	0.37	0.029	0.064	0.008
Denmark (Convention)	155	42					1.47	T2	CS, D	1.0	0.37	0.046	0.064	0.008
Estonia			123	48	31		0.32	T1, T2	CS, D			0.085	0.007	0.005
European Union (KP)	115	51					0.52			0.55	0.27	0.013	0.052	0.004
European Union (Convention)	115	51					0.52			0.55	0.27	0.012	0.052	0.004
Finland	133	53					0.49	T2	D	0.78	0.42	0.077	0.034	0.007
France (KP)	115	60					0.56	T2	CS, D	0.41	0.19	0.022	0.004	0.001
France (Convention)	115	60					0.56	T2	CS, D	0.41	0.19	0.022	0.004	0.001
Germany	124	50					0.37	T2	CS, D	0.61	0.35	0.029	0.073	0.002
Greece	140	55					0.31	D	D	1.0	0.28	0.012	0.11	0.002
Hungary	119	52					0.72	T1, T2	CS, D	1.2	0.53	0.071	0.060	0.004
Iceland			98	60	29		0.40	T1, T2	CS, D			0.044	NO	0.003
Ireland	103	55					0.89	T2	CS, D	0.12	0.14	0.010	0.026	0.002
Italy	129	52					0.51	T2	CS, D	0.80	0.33	0.013	0.093	0.005
Japan	77	43					0.32	CS, T1	CS, D	1.7	0.96	IE	0.46	0.004
Kazakhstan	61	43					0.64	T1, T2	CS, D	0.67	0.47	0.043	0.57	0.027
Latvia			115	62	20		0.67	T1, T2	D			0.082	0.051	0.004
Liechtenstein			112		35		0.83					0.081	0.030	0.013
Lithuania	111	44					0.88	T1, T2	D	0.52	0.27	0.046	0.012	0.004
Luxembourg						74	0.26	T2	CS			0.017	0.033	0.011
Malta						66	0.47	T1, T2	CS, D			0.23	0.033	0.005
Monaco	NO	NO					–			NO	NO	NO	NO	NO
Netherlands			147	84	40		0.41	T1	D			0.007	0.025	0
New Zealand	124	75					0.16	T1	CS	NO	NO	NO	0.154	0.001
Norway			128	93	44		0.28	T2	CS, D			0.024	0.008	0.003
Poland						57	0.54	T1, T2	CS, D			0.044	0.078	0.001
Portugal	118	56					0.28	T2	CS, D	0.45	0.041	0.005	0.007	0.004
Romania	54	29					0.52	T2	D	0.21	0.12	0.014	0.044	0.002
Russian Federation	138	35					0.39	T1	CS, D	0.89	0.17	0.080	0.034	0.007
Slovakia	115	42					0.40	T1, T2	CS	0.78	0.28	0.094	0.072	0.002
Slovenia						58	0.46	T1, T2	CS, D			0.054	0.029	0.002
Spain	113	57					0.57	T1, T2	D	0.42	0.13	0.014	0.032	0.003
Sweden	131	42					0.64	CS, T2	CS, D	0.75	0.25	0.028	0.067	0.009
Switzerland			112	85	33		0.88	CS, T3	D			0.084	0.022	0.004
Turkey	82	37					0.87	T1	D	0.54	0.25	0.067	NO	0.004
Ukraine			70	57	29		0.30	CS, T1, T2	CS, D			0.018	0.085	0.002
United Kingdom of Great Britain and Northern Ireland (KP)	110	45					0.60	T2	CS, D	0.51	0.58	0.002	0.18	0.008
United Kingdom of Great Britain and Northern Ireland (Convention)	110	45					0.60	T2	CS, D	0.51	0.58	0.002	0.18	0.008
United States of America						58	0.29	M, T1, T2	CS, D, M			0.20	0.091	0.003

[a] The national total includes indirect CO_2 emissions from the atmospheric oxidation of CH_4, CO and NMVOCs for the following Parties: Canada, Czechia, Denmark (KP), Denmark (Convention), European Union (KP), European Union (Convention), Finland, Japan, Latvia, Netherlands, Portugal and Switzerland.

[b] Source of default N excretion rates: 2006 IPCC Guidelines for National Greenhouse Gas Inventories Volume 4 Chapter 10 Emissions from Livestock and Manure Management, table 10.19, page 10.59. Default values are provided by regions as shown below. The unit of the IPCC defaults is kg N (1000 kg animal mass)$^{-1}$ day^{-1}.

IPCC defaults:

	North America	Western Europe	Eastern Europe	Oceania	Latin America	Africa	Middle East	Asia
Dairy cattle	0.44	0.48	0.35	0.44	0.48	0.6	0.7	0.47
Non-dairy cattle	0.31	0.33	0.35	0.5	0.36	0.63	0.79	0.34
Sheep	0.42	0.85	0.9	1.13	1.17	1.17	1.17	1.17
Swine	0.5	0.68	0.74	0.73	1.64	1.64	1.64	0.5
Poultry	0.83	0.83	0.82	0.82	0.82	0.82	0.82	0.82

Table 3.4

Agriculture soils - N_2O (2018)

	Methods and EF used		Direct N_2O emissions from managed soils								Indirect N_2O emissions from managed soils				
			Share of national total[a]	Inorganic N fertilizers		Organic N fertilizers	Urine and dung deposited by grazing animals	Crop residue	Loss/gain of soil organic matter	Cultivation of organic soils	Share of national total[a]	Atmospheric deposition		Nitrogen leaching and run-off	
				Activity data	N_2O IEF	N_2O IEF						Activity data	N_2O IEF	Activity data	N_2O IEF
	Methods	EF		Use of synthetic fertilizers											
			(%)	(kg N / year)	(kg N_2O-N / kg N)						(%)	(kg N / year)	(kg N_2O-N / kg N)	(kg N / year)	(kg N_2O-N / kg N)
IPCC default EF					0.01 (0.003-0.03)[b]					8 (2-24)[c], 16 (5-48)[d]			0.01 (0.002-0.05)[e]		0.0075 (0.0005-0.025)[e]
Australia	CS, T1, T2	CS, D	1.81	1 411 215 807	0.004	0.009	0.004	0.010	1.481	8.0	0.57	406 790 112	0.004	486 891 411	0.011
Austria	T1	D	2.12	115 419 850	0.010	0.010	0.017	0.010	0.010	8.2	0.41	30 462 767	0.010	51 487 681	0.008
Belarus	T1	D	11.26	404 900 000	0.010	0.010	0.020	0.010	NE	8.0	1.57	79 848 431	0.010	303 927 215	0.008
Belgium	T1	D	2.19	154 682 662	0.010	0.010	0.019	0.010	0.012	8.0	0.59	36 383 405	0.010	148 835 934	0.008
Bulgaria	T1	D	5.71	339 329 000	0.010	0.010	0.013	0.010	0.010	8.0	1.50	34 812 152	0.010	199 732 239	0.008
Canada	T1, T2	CS, D	2.80	2 641 000 000	0.009	0.012	0.002	0.009	0.013	8.0	0.58	266 204 911	0.010	849 207 304	0.008
Croatia	T1	D	3.57	99 420 000	0.010	0.010	0.011	0.010	0.010	8.0	1.15	18 157 521	0.010	53 550 608	0.008
Cyprus	T1	CS, D	1.17	7 824 000	0.010	0.010	NO	0.010	NO	NO	0.19	3 509 762	0.010	NO	NO
Czechia	T1, T2	CS, D	2.51	351 780 000	0.010	0.010	0.019	0.010	0.010	NO	0.79	65 975 412	0.010	665 390 627	0.002
Denmark (KP)	CS, D, T1, T2	D	7.35	224 184 000	0.010	0.010	0.018	0.010	0.010	7.8	1.10	42 724 277	0.010	153 137 000	0.005
Denmark (Convention)	CS, D, T1, T2	CS, D	7.10	224 199 174	0.010	0.010	0.017	0.010	0.010	7.8	1.06	42 769 427	0.010	153 146 381	0.005
Estonia	D, T1	D	2.76	38 867 000	0.010	0.010	0.017	0.010	NO	8.0	0.64	8 324 574	0.010	25 321 288	0.008
European Union (KP)			3.15	11 387 821 814	0.010	0.009	0.015	0.010	0.007	6.4	0.70	1 948 496 221	0.010	6 359 822 597	0.007
European Union (Convention)			3.16	11 376 078 814	0.010	0.009	0.015	0.010	0.007	6.9	0.70	1 945 868 354	0.010	6 351 830 017	0.007
Finland	T1, T2	CS, D	5.56	138 385 000	0.010	0.010	0.017	0.010	0.010	9.7	0.72	9 528 989	0.010	101 978 979	0.008
France (KP)	T1, T2	CS, D	5.82	2 226 832 215	0.010	0.010	0.019	0.010	NO	8.0	1.40	285 906 467	0.010	1 385 706 782	0.007
France (Convention)	T1, T2	CS, D	5.74	2 230 947 654	0.010	0.010	0.019	0.010	NO	8.0	1.38	286 768 694	0.010	1 389 189 451	0.007
Germany	T1, T2	CS, D	2.27	1 496 649 000	0.010	0.010	0.019	0.010	0.010	4.7	0.60	312 638 719	0.010	1 041 286 795	0.007
Greece	T1	D	2.42	179 436 000	0.010	0.010	0.010	0.010	NE	8.0	0.86	66 040 986	0.010	138 535 526	0.008
Hungary	T1, T2	D	5.50	424 276 830	0.010	0.010	0.015	0.010	0.010	NO	0.43	36 944 469	0.010	28 655 672	0.008
Iceland	T1, T1b, T2	CS, D	4.34	11 743 000	0.010	0.010	0.011	0.010	NO	0.50	0.83	2 627 867	0.010	7 992 580	0.007
Ireland	T1	CS, D	8.74	408 495 000	0.012	0.010	0.009	0.010	0.010	4.3	0.94	51 578 776	0.010	93 803 172	0.008
Italy	CS, T1	CS, D	1.57	495 005 180	0.010	0.010	0.011	0.010	NA	8.0	0.38	127 800 642	0.010	288 638 744	0.008
Japan	CS, T2	CS, D	0.29	374 702 711	0.007	0.006	0.009	0.010	0.004	1.3	0.15	132 710 798	0.010	351 062 588	0.008
Kazakhstan	T1, T2	CS, D	2.84	81 004 791	0.009	0.010	0.015	0.010	0.010	NO	0.37	151 374 788	0.010	2 150 156 337	0.001
Latvia	T1	D	11.85	74 500 000	0.010	0.010	0.019	0.010	NO	11	1.33	12 163 950	0.010	28 329 838	0.008
Liechtenstein	T1b	D	2.45	196 178	0.010	0.010	0.018	0.010	NO	8.0	0.78	77 719	0.026	128 517	0.008
Lithuania	T1	D	9.53	176 114 286	0.010	0.010	0.019	0.010	NO	8.0	2.01	22 203 155	0.010	86 669 546	0.008
Luxembourg	T1, T2	CS, D	1.40	13 037 517	0.010	0.010	0.020	0.010	0.010	NO	0.39	2 929 048	0.010	7 918 902	0.008
Malta	T1	D	0.64	585 705	0.010	0.010	NO	0.010	NO	NO	0.23	381 016	0.010	896 767	0.008
Monaco			–	NO	NO	NO	NO	NO	NO	NO	–	NO	NO	NO	NO
Netherlands	T1, T1b, T2	CS, D	2.51	229,195,368	0.013	0.009	0.033	0.014	NO	4.4	0.33	49 298 303	0.012	99 955 364	0.008
New Zealand	T1, T2	CS, D	7.10	457 800 000	0.007	0.004	0.005	0.010	0.010	8.0	1.81	196 378 087	0.010	143 994 571	0.008
Norway	T1	CS, D	2.62	102 392 000	0.010	0.010	0.016	0.010	NO	13	0.46	16 526 349	0.011	43 208 075	0.007
Poland	T1	CS, D	3.02	1 178 800 000	0.010	0.010	0.019	0.010	NO	8.0	0.70	193 173 869	0.010	566 344 602	0.008
Portugal	T1, T2	CS, D	2.57	100 450 011	0.010	0.010	0.018	0.010		NO	0.62	20 842 492	0.012	85 746 136	0.008
Romania	T1	D	4.30	468 639 000	0.010	0.010	0.015	0.010	NO	8.0	1.30	91 633 760	0.010	306 251 432	0.008
Russian Federation	CS, T1, T2	CS, D	2.37	1 542 017 200	0.014	0.010	0.018	0.010	0.010	8.0	0.40	531 896 436	0.010	1 844 873 784	0.008
Slovakia	T1	CS, D	2.47	128 976 885	0.010	0.010	0.015	0.010	NO	NE	0.75	18 653 339	0.010	67 201 172	0.008
Slovenia	T1, T2	D	1.88	27 293 000	0.010	0.010	0.017	0.010	0.010	8.0	0.63	8 789 776	0.010	19 597 465	0.008
Spain	CS, T1, T2	D	3.14	1 033 494 000	0.010	0.010	0.017	0.010	NA	NO	0.55	266 682 282	0.010	167 035 484	0.008
Sweden	CS, T1, T2	CS, D	5.37	184 187 000	0.010	0.010	0.017	0.010	0.010	13	0.54	19 948 840	0.010	52 922 600	0.008
Switzerland	T1, T3	CS, D	2.37	45 772 144	0.010	0.010	0.019	0.010	0.010	8.0	0.85	21 849 100	0.026	35 993 693	0.008
Turkey	T1	D	3.87	1 527 587 617	0.010	0.010	0.013	0.010	NO	8.0	0.49	502 517 291	0.010	59 388 414	0.008
Ukraine	CS, T1, T2	D	7.86	1 563 439 158	0.010	0.010	0.019	0.010	0.010	8.0	2.00	279 671 078	0.010	1 563 507 805	0.008
United Kingdom of Great Britain and Northern Ireland (KP)	T1, T1a, T2	CS, D	1.97	1 060 220 306	0.007	0.005	0.005	0.010	0.010	8.0	0.48	108 379 606	0.010	486 899 661	0.008
United Kingdom of Great Britain and Northern Ireland (Convention)	T1, T1a, T2	CS, D	1.97	1 060 220 306	0.007	0.005	0.005	0.010	0.010	8.0	0.48	108 379 606	0.010	486 899 661	0.008
United States of America	D, OTH	D, OTH	4.28	11 467 325 512	0.012	0.010	0.007	0.008	0.008	9.8	0.79	2 471 173 594	0.010	11 649 399 659	0.007

[a] The national total includes indirect CO_2 emissions from the atmospheric oxidation of CH_4, CO and NMVOCs for the following Parties: Canada, Czechia, Denmark (KP), Denmark (Convention), European Union (KP), European Union (Convention), Finland, Japan, Latvia, Netherlands, Portugal and Switzerland.

[b] Source of default emission factors: 2006 IPCC Guidelines for National Greenhouse Gas Inventories, table 11.1, page 11.11. IEFs for N-fixing crops and crop residues are shown in the unit kg N_2O-N/kg N. The unit of the IPCC default emission factor is also kg N_2O-N/kg N.

[c] For cultivation of histosols (drained/managed organic soils), the two default values refer to temperate. The values in parenthesis indicate the range as presented in 2006 IPCC Guidelines for National Greenhouse Gas Inventories, table 11.1, page 11.11.

[d] For cultivation of histosols (drained/managed organic soils), the two default values refer to temperate tropical. The values in parenthesis indicate the range as presented in 2006 IPCC Guidelines for National Greenhouse Gas Inventories, table 11.1, page 11.11.

[e] Source of default emission factor: 2006 IPCC Guidelines for National Greenhouse Gas Inventories, table 11.3, page 11.24.

Table 4.1a

Methods and emission factors used (2018)

	Forest Land						Cropland						Grassland					
	CO_2		CH_4		N_2O		CO_2		CH_4		N_2O		CO_2		CH_4		N_2O	
	Method	EF	Method	EF	Method	EF	Method	EF	Method	EF	Method	EF	Method	EF	Method	EF	Method	EF
Australia	T2, T3	CS, M	T2, T3	CS	T2, T3	CS	T1, T3	D, M	T2	CS	T2	CS	T1, T2, T3	CS, D, M	T2, T3	CS	T2, T3	CS
Austria	T2, T3	CS	T1	D	T1, T2	CS, D	T2, T3	CS			T2	CS, D	T1, T2, T3	CS	T1	D		
Belarus	T1, T2	CS, D	T1	CS, D	T1	CS, D	T1	D										
Belgium	CS, T1, T2	CS			T1	D	CS, T1, T2	CS			T1	D	CS, T1, T2	CS			T1	D
Bulgaria	T1, T2	CS, D	T1	D	T1	D	T1, T2	CS, D			T1	D	T1, T2	CS, D			T1	D
Canada	T1, T3	CS, D	T1, T2	CS, D	T1, T2	CS, D	T1, T2, T3	CS, D	T2	CS	T2	CS			T1	D	T1	D
Croatia	T1, T3	CS, D	T1	D	T1	D	T1, T2	CS, D	T1	D	T1, T2	CS, D	T1	CS, D	T1	D	T1	D
Cyprus	T1	OTH	T1	OTH	T1	OTH	T1	OTH					T1	OTH				
Czechia	T2	CS, D	T2	CS, D	T2	CS, D	T1, T2	CS, D			T1, T2	CS, D	T1, T2	CS, D				
Denmark (KP)					T1	D					T1	D	T1, T2	CS, D	T1	D	T1	D
Denmark (Convention)					T1	D					T1	D	T1, T2	CS, D	T1	D	T1	D
Estonia	T1, T2	CS, D, OTH	T1, T2	D	T1, T2	D	T1, T2	CS, D, OTH			T1	D	T1, T2	CS, D, OTH	T2	D	T2	D
European Union (KP)																		
European Union (Convention)																		
Finland	T2, T3	CS, D	T1, T2	CS, D	T1, T2	CS, D	T1, T2, T3	CS, D			T1	CS, D	T1, T2, T3	CS, D	T2	D	T1, T2	D
France (KP)	T1, T2	CS, D	T1, T2	CR, D	T1, T2	CR, D	T1, T2	CS, D	T1, T2	D	T1, T2	D	T1, T2	CS, D	T1, T2	D	T1, T2	D
France (Convention)	T1, T2	CS, D	T1, T2	CR, D	T1, T2	CR, D	T1, T2	CS, D	T1, T2	D	T1, T2	D	T1, T2	CS, D	T1, T2	D	T1, T2	D
Germany	CS, T2	CS	T2	CS, D	T2	CS, D	T2	CS	T2	CS	T2	CS, D	T2	CS	T2	CS	T2	CS, D
Greece	OTH, T1, T2	CS, D, OTH	T1	D	T1	D	T1, T2	CS, D			T1	D	T1, T2	CS, D	T1	D	T1	D
Hungary	T1, T2	CS, D	T1, T2	CS, D	T1, T2	CS, D	T1, T2	CS, D	T2	D	T1, T2	D	T1, T2	CS, D	T1	D	T1	D
Iceland	T1, T2, T3	CS, D	T1	D	T1, T2	CS, D	D, T1, T2, T3	CS, D	T1	D			T1, T2, T3	CS, D	T1	D	T2	CS
Ireland	CS, T1, T2, T3	CS	D, T1	CS, D	D, T1	CS, D			D, T1	D	D, T1	D	D, T1, T2, T3	CS, D	D, T1	D	D, T1	D
Italy	T1, T2, T3	CS, D	T2	CS, D	T2	CS, D	T1, T2	CS, D	T1	D	T1	D	T1, T2, T3	CS, D	T1	CS	T1	CS
Japan	T1, T2, T3	CS, D	T1	D	T1, T2	CS, D	T1, T2, T3	CS, D	T1	CS, D	CS, T1	CS, D	T1, T2, T3	CS, D	T1	CS, D	CS, T1	CS, D
Kazakhstan	T2	CS	T2	D	T2	D	T2	CS					T2	CS	T1	D	T1	D
Latvia	T1, T2	CS, D	T1	D	T1	D	T1, T2, T3	CS, D	T1	D	T1	CS	T1, T2, T3	CS, D	T1	D	T1	D
Liechtenstein	T2	CS					T2	CS			T2	CS	T2	CS			T2	CS
Lithuania	T1, T2	CS, D	T1, T2	D	T1, T2	D	T1, T2	CS, D	T1	D	T1, T2	D	T1, T2	CS, D	T1	D	T1	D
Luxembourg	T1, T2	CS, D					T1	CS, D			T1	D	T1	CS, D			T1	D
Malta							T1	D, OTH			T1	D	T1	D, OTH				
Monaco																		
Netherlands	T1, T2	CS, D	T1	CS, D	T1	CS, D	CS, T1	CS, D			D, T1	CS	CS, T1, T2	CS, D	CS	D	CS, D, T1	CS, D
New Zealand	T1, T2, T3	CS, D	T1, T2	CS, D	T1, T2	CS, D	T1, T2, T3	CS, D			T1, T2	CS, D	T1, T2, T3	CS, D	T1, T2	CS, D	T1, T2	CS, D
Norway	T1, T2, T3	CS, D	T1	D	T1	D	T1, T2, T3	CS, D	T1	D	T1	D	T1, T2, T3	CS, D	T1	D	T1	D
Poland	T2	CS, D	D, T2	CS, D	D, T2	CS, D	T1, T2	D			T1	D	D, T1, T2	CS, D	D, T1	CS, D	D, T1	CS, D
Portugal	CS, T2	CS, D	D	D	D	D			D	D	D	D			D	D	D	D
Romania	T1, T2, T3	CS, D	T1	D	T1	D	T1	D			T1	D	T1, T2	CS, D			T1	D
Russian Federation	CS, T2	CS, D	T1, T2	CS, D	T1, T2	CS, D	CS, T1	CS, D	T1	D			CS, T1, T3	CS	T1	D	T1	D
Slovakia	T1, T2	CS, D	T2	CS, D	T2	CS, D	T1, T2	CS, D			T2	CS, D	T1, T2	CS, D			T2	CS, D
Slovenia	CS, D, T1, T2, T3	CS, D	D, T1	D	D, T1	D	CS, D, T1, T2	CS, D			D, T1	D	D, T1, T2	CS, D			D, T1	D
Spain	CS, T1, T2	CS, D	CS	D	CS, T1	D	T1, T2	CS, D	T1	D	T1	D	T1, T2	CS, D	CS, T1	D	CS, T1	D
Sweden	T2, T3	CS	T1	CS, D	T1	CS, D	T2, T3	CS	T1	CS	T1	D	T2, T3	CS	T1	CS	T1	D
Switzerland	T2, T3	CS, M	T1	D	T1	D	T2, T3	CS, M			T1	D	T2, T3	CS, M	T1	D	T1	D
Turkey	T2	CS, D	T1	D	T1	D	T1, T2	CS, D			T1	D	T1, T2	CS, D			T1	D
Ukraine	CS, T1, T2	CS, D	CS, T1	D	CS, T1	D	CS, T1, T3	CS, D	CS, T1	D	CS, T1	D	CS, T1, T3	CS, D	T1	D	T1	D
United Kingdom of Great Britain and Northern Ireland (KP)	CS, D, T1, T3	CS, D	D, T1	CS, D	D, T1	CS, D	CS, D, T1, T3	CS, D	D	CS	D	CS, D	CS, D, T1, T3	CS, D	D	CS	D	CS, D
United Kingdom of Great Britain and Northern Ireland (Convention)	CS, D, T1, T3	CS, D	D, T1	CS, D	D, T1	CS, D	CS, D, T1, T3	CS, D	D	CS	D	CS, D	CS, D, T1, T3	CS, D	D	CS	D	CS, D
United States of America	T2, T3	CS, D	T2	D	T1, T2	D	OTH, T2	CS, OTH					OTH, T2	CS, OTH	OTH	OTH	OTH	OTH

Table 4.1b

Methods and emission factors used (2018)

	Wetlands						Settlements						Other Land						Harvested Wood Products	
	CO_2		CH_4		N_2O		CO_2		CH_4		N_2O		CO_2		CH_4		N_2O		CO_2	
	Method	EF	Method	EF	Method	EF	Method	EF	Method	EF	Method	EF	Method	EF	Method	EF	Method	EF	Method	EF
Australia	T2, T3	CS, M	T3	CS	T3	CS	T2, T3	CS, M	CS	CS	CS, T2	CS							T2, T3	D, M
Austria	T2, T3	CS					T2, T3	CS			T2, T3	CS	T2, T3	CS					T3	CS, D
Belarus	T1	D			T1	D														
Belgium	CS, T1	CS			T1	D	CS, T1	CS			T1	D							T2	D
Bulgaria	T1, T2	CS, D			T1	D	T1, T2	CS, D			T1	D							T2	D
Canada	T2, T3	CS	T2	CS	T2	D	T2, T3	CS	T2	CS	T2	CS							T3	CS
Croatia	T1	D			T1	D	T1, T2	CS, D			T1	D							T2	D
Cyprus	T1	OTH					T1	OTH					T1	OTH						
Czechia	T1, T2	CS, D					T2	CS											T1, T2	D
Denmark (KP)			T1	D	T1	D					T1	D								
Denmark (Convention)			T1	D	T1	D					T1	D								
Estonia	T2	CS, D, OTH	T2	CS	T2	CS	T2	CS, D, OTH			T1	D	T2	CS, D, OTH			T1	D	T2, T3	CS, D
European Union (KP)																				
European Union (Convention)																				
Finland	T2, T3	CS, D	T1, T2	CS, D	T2	CS	T2, T3	CS			T1	D							T2	CS, D
France (KP)	T1, T2	CS, D	T1, T2	D	T1, T2	D	T1, T2	CS, D	T1, T2	D	T1, T2	D							T3	CS
France (Convention)	T1, T2	CS, D	T1, T2	D	T1, T2	D	T1, T2	CS, D	T1, T2	D	T1, T2	D							T3	CS
Germany	T2, T3	CS	T2	CS	T2	CS	T1, T2	CS, D	T1, T2	CS, D	T2	CS, D							CS, T2	D
Greece	T1	D			T1	D	T1, T2	CS, D			T1	D	T1, T2	CS, D			T1	D	T2	D
Hungary	T1, T2	CS, D			T1	D	T1, T2	CS, D			T1	D	T2	CS, D			T1	D	T2	D
Iceland	RA, T1, T2	CS, D	RA, T1, T2	CS, D			T1, T2, T3	CS			CS	D							D	D
Ireland	D, T1, T2, T3	CS, D	D, T2	CS, D	D, T2	CS, D	D, T1, T3	CS, D, OTH			T1	D	T1, T3	CS			T1	D	T2	D
Italy	T1	D					T1	D			T1	D							T2	CS
Japan	T2	CS, D					T2	CS, D					T2	CS, D			T1	CS, D	T2, T3	CS, D
Kazakhstan	T1	CS					T1	CS												
Latvia	T1, T2	CS, D	T1	D	T1	D	T1, T2	CS, D			T1	D							T2	CS
Liechtenstein	T2	CS			T2	CS					T2	CS	T2	CS			T2	CS	T2	CS
Lithuania	T1	D			T1	D	T1, T2	CS, D			T1, T2	CS, D	T2	CS			T1, T2	CS, D	T1, T2	D
Luxembourg	T1	CS, D			T1	D	T1	CS, D			T1	D	T1	CS			T1	D	T1	D
Malta							T1	D, OTH			T1	D	T1	OTH			T1	D		
Monaco							T1, T2	D			T1	D								
Netherlands	T1, T2	CS, D			D, T1	CS	CS, T1, T2	CS, D			T1	CS	CS, T1, T2	CS, D			T1	CS	T1	D
New Zealand	T1, T2	CS, D			T1, T2	CS, D	T1, T2	CS, D			T1, T2	CS, D	T1, T2	CS, D			T1, T2	CS, D	T2	CS, D
Norway	T1, T2, T3	CS, D	T1	D	T1	D	T1, T2, T3	CS, D			T1, T2	D							T2	D
Poland	T1	D					T1, T2	CS, D			T1	D							T2	D
Portugal																			D	D
Romania	T1	D			T1	D	T1	D			T1	D	T1	D			T1	D	T1	D
Russian Federation	T1	CS, D	T1	CS, D	T1	D	CS, T1	CS			T1	D	T1	CS			T1	D	T1	D
Slovakia							T1, T2	CS, D			T2	CS, D	T1, T2	CS, D			T2	CS, D	T2	CS, D
Slovenia	D, T1, T2	CS, D					D, T2	CS, D			D, T1, T2	D	D, T2	CS, D			D, T2	D	D, T1	D
Spain	T1, T2	CS, D	T1	D	T1	D	T1, T2	CS, D			T1	D	T1, T2	CS, D			T1	D	T2	D
Sweden	T2, T3	CS	T1	CS	T1	CS	T2, T3	CS			T1	D	T2, T3	CS					T3	D
Switzerland	T2	CS	T2	D	T1	D	T2	CS			T1	D	T2	CS			T1	D	T2	D
Turkey	T1, T2	CS, D			T1	D	T1	D					T1	D					T2	CS, D
Ukraine	T1	CS, D	T1	CS, D	T1	D	T1	CS, D			T1	D	T1	CS, D			T1	D	T1	D
United Kingdom of Great Britain and Northern Ireland (KP)	D, T1	D			D	CS	CS, D, T1, T3	CS, D	D	CS	D	CS, D							CS, T3	CS
United Kingdom of Great Britain and Northern Ireland (Convention)	D, T1	D			D	CS	CS, D, T1, T3	CS, D	D	CS	D	CS, D							CS, T3	CS
United States of America	T2	CS	T1	D	T1	D	OTH, T2, T3	CS, OTH			OTH, T1	D, OTH							T3	CS

Table 4.2

Forest land - AD, IEFs, carbon stock changes in pools and net CO_2 emissions/removals (2018)[a, b]

	Forest land remaining forest land							Land converted to forest land						
	IEF (t C/ha)													
	CSC[c] in living biomass/area[d]			Net CSC[c] in dead wood/area	Net CSC[c] in litter/area	Net CSC[c] in soils/area[e, f]		CSC[c] in living biomass/area[d]			Net CSC[c] in dead wood/area	Net CSC[c] in litter/area	Net CSC[c] in soils/area[e, f]	
	Gains	Losses	Net Change			Mineral soils	Organic soils	Gains	Losses	Net Change			Mineral soils	Organic soils
IPCC default EF														
Australia	0.065	-0.013	0.052	0.002	0.003	0.007	IE, NA	0.71	IE, NO	0.71	0.11	-0.007	-0.12	9.1
Austria	2.4	-2.1	0.31	0.058	IE, NE	-0.18	NO	1.7	-0.52	1.19	0.016	1.2	0.70	NO
Belarus	1.5	-0.88	0.58	0.039	0.057	0.28	NE	NE	NE	NE	NE	NE	NE	NE
Belgium	0.45	NO	0.45	NO	NO	NO	NO	1.2	0.000	1.2	0.026	0.10	0.90	NO
Bulgaria	0.46	IE, NO	0.46	-0.003	NE, NO	NE, NO	NO	2.4	-0.29	2.1	NE, NO	0.51	-1.1	NO
Canada	2.6	-2.4	0.14	0.12	-0.12	0.031	IE	4.3	-1.7	2.6	0.32	0.36	-0.20	IE, NO
Croatia	1.8	-1.1	0.61	NO	NO	NO	NO	1.2	-0.037	1.2	0.017	0.23	-0.25	NO
Cyprus	0.28	-0.046	0.23	NO	NO	NO	NO	1.2	-0.006	1.2	0	0.017	0.89	NO
Czechia	3.2	-4.0	-0.80	-0.011	NO	NO	NO	2.0	NO	2.0	0.020	0.54	0.32	NO
Denmark (KP)	1.3	NO	1.3	-0.098	-1.3	NA	-1.3	0.83	-0.15	0.68	-0.003	-0.080	0.16	-1.2
Denmark (Convention)	1.3	NO	1.3	-0.098	-1.3	NA, NO	-1.3	0.83	-0.15	0.68	-0.003	-0.080	0.16	-1.2
Estonia	0.23	IE	0.23	0.012	NO	0.17	-0.18	0.27	-0.11	0.16	0.014	0.30	0.061	-0.34
European Union (KP)	1.3	-0.83	0.50	0.027	-0.017	0.087	-0.30	2.1	-0.73	1.3	0.031	0.22	0.12	-1.0
European Union (Convention)	1.3	-0.83	0.50	0.027	-0.018	0.087	-0.30	2.1	-0.73	1.3	0.032	0.22	0.11	-1.0
Finland	1.7	-1.6	0.19	IE	IE	0.15	-0.19	1.5	-0.34	1.1	NA	IE, NA	0.019	-1.4
France (KP)	1.7	-1.2	0.54	-0.022	NE	NE	NO	1.4	-0.16	1.2	0.048	0.28	0.079	NO
France (Convention)	1.6	-1.1	0.52	-0.021	NE	NE	NO	1.4	-0.16	1.2	0.048	0.28	0.079	NO
Germany	1.2	IE	1.2	0.094	-0.013	0.41	-2.6	8.8	-2.6	6.1	0.22	0.36	0.045	-2.6
Greece	0.17	IE, NO	0.17	NA, NO	NA, NO	NA, NO	NA, NO	0.53	-0.38	0.15	NE, NO	NE, NO	NE, NO	NO
Hungary	0.45	IE, NO	0.45	0.022	NO	NO	-2.6	2.1	-0.050	2.1	0.070	0.44	0.18	NO
Iceland	0.10	IE	0.10	IE, NO	NA	NA	-0.37	1.4	-0.021	1.4	IE, NA, NO	0.14	0.41	-0.37
Ireland	3.2	-2.7	0.52	IE	0.12	-0.046	-0.45	6.9	-4.7	2.2	IE, NO	1.0	0.093	-0.74
Italy	2.4	-1.5	0.91	0.008	0.014	NA, NO	NO	2.6	-1.6	0.98	0.008	0.014	0.18	NO
Japan	0.63	0.000	0.63	-0.019	0.003	0.023	NO	3.0	-0.008	3.0	0.65	0.28	0.15	NO
Kazakhstan	0.082	NO	0.082	0.005	0.004	0.18	NO	0.13	NO	0.13	0.004	0.066	1.8	NO
Latvia	3.0	-2.8	0.24	0.21	NA	NA	-0.52	0.29	IE, NO	0.29	0.085	0.081	NA, NO	-0.52
Liechtenstein	2.5	-2.9	-0.43	0.013	IE	NO	NO	1.3	-1.3	0.061	NO	NO	NO	NO
Lithuania	0.50	IE	0.50	0.040	NO	NE	IE	1.6	IE	1.6	NO	0.12	0.56	IE
Luxembourg	3.1	-2.7	0.48	0.11	NO	NO	NO	3.1	-0.12	3.0	0.32	0.96	1.5	NO
Malta	NA	NA	NA	NA	NA	NA	NO	NO	NO	NO	NO	NO	NO	NO
Monaco	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
Netherlands	3.3	-2.1	1.1	0.067	NO	NA	-0.93	4.0	-0.66	3.3	NE	NE	0.003	-1.0
New Zealand	1.1	-1.1	-0.019	0.064	-0.004	0.000	-0.11	8.4	-2.3	6.1	0.39	-0.082	-0.24	-0.68
Norway	1.1	-0.63	0.45	0.031	0.15	0.004	-0.24	0.77	-0.12	0.65	0.016	1.35	-0.26	-0.93
Poland	0.97	IE	0.97	NO	NO	0.098	-0.68	1.0	NO	1.0	NO	NO	0.29	-0.68
Portugal	2.0	-1.5	0.49	IE	-0.002	-0.003	NO	2.3	-0.69	1.6	IE	0.084	0.37	NO
Romania	1.6	-0.76	0.80	0.000	NO	NO	-0.68	1.9	IE	1.9	NO	NO	2.2	NO
Russian Federation	0.32	-0.098	0.22	0.019	0.006	0.028	-0.71	0.026	0.000	0.025	0.005	0.000	0.003	NA, NO
Slovakia	2.5	-2.0	0.48	NA	NA	NA	NO	1.5	NO	1.5	NA, NO	0.42	1.1	NO
Slovenia	IE	-0.40	-0.40	0.17	NO	NO	NO	0.41	NO	0.41	0.18	0.14	0.26	NO
Spain	0.53	IE	0.53	NA	NA	NA	NO	1.3	IE, NO	1.3	0.054	0.13	0.56	NO
Sweden	0.34	IE	0.34	0.057	-0.078	0.19	-0.35	0.69	IE	0.69	0.033	0.34	-0.093	-1.4
Switzerland	2.9	-2.7	0.25	0.043	-0.036	0.002	-0.078	1.4	-1.0	0.43	0.16	0.70	1.0	-0.078
Turkey	1.4	-0.43	1.0	NO	NO	NO	NO	0.24	-0.004	0.24	NO	0.19	0.80	NO
Ukraine	1.6	-0.27	1.3	NA	NA	NA	-0.68	0.48	-0.020	0.46	NA	0.052	0.81	NO
United Kingdom of Great Britain and Northern Ireland (KP)	4.7	-4.0	0.75	0.30	0.034	0.41	0.65	1.2	-0.22	0.98	0.033	0.032	-0.82	-1.4
United Kingdom of Great Britain and Northern Ireland (Convention)	4.7	-4.0	0.75	0.30	0.034	0.41	0.65	1.2	-0.22	0.98	0.033	0.032	-0.82	-1.4
United States of America	0.46	IE	0.46	0.084	0.003	0.003	-0.055	19	IE	19	3.5	5.9	0.28	IE

[a] The signs for estimates of gains in carbon stocks are positive (+) and of losses in carbon stocks are negative (–).

[b] Where Parties directly estimate emissions and removals rather than carbon stock changes, they may use notation keys only in the stock change columns.

[c] CSC = carbon stock change.

[d] Carbon stock gains and losses should be listed separately except in cases where, due to the methods used, it is technically impossible to separate information on gains and losses.

[e] When Parties cannot estimate carbon stock changes for organic and mineral soil separately, these should be reported under mineral soils.

[f] Parties who wish to do so may report annual on-site CO_2-C emissions/removals and off-site CO_2-C emissions from drained and rewetted organic soils here.

Table 4.3

Cropland - AD, IEFs, carbon stock changes in pools and net CO_2 emissions/removals (2018)[a, b]

	Cropland remaining cropland						Land converted to cropland					
	IEF (t C/ha)											
	CSC[c] in living biomass/area[d, e]			Net CSC[c] in DOM[f]/area[g]	Net CSC[c] in soils/area[h, i]		CSC[c] in living biomass/area[d, e]			Net CSC[c] in DOM[f]/area[g]	Net CSC[c] in soils/area[h, i]	
	Gains	Losses	Net Change		Mineral soils	Organic soils	Gains	Losses	Net Change		Mineral soils	Organic soils
IPCC default EF												
Australia	0.001	IE	0.001	NA	0.026	IE	IE, NA, NO	-0.13	-0.13	-0.026	-0.073	-5.0
Austria	0.035	-0.037	-0.002	NO	0.028	NO	0.29	-0.31	-0.018	-0.032	-0.98	NO
Belarus	0.044	-0.036	0.008	NE	NE	-1.0	NE	NE	NE	NE	NE, NO	-1.0
Belgium	0.002	NO	0.002	NO	-0.040	-10	NO	-0.016	-0.016	0.001	-1.5	NO
Bulgaria	0.018	-0.023	-0.005	NO	0.052	NO	0.015	NO	0.015	NO	-0.95	NO
Canada	0.004	-0.001	0.003	-0.009	0.059	-5.0	NE, NO	-0.78	-0.78	-1.4	0.88	IE, NE, NO
Croatia	0.16	-0.20	-0.042	NO	-0.011	-10	0.51	-0.016	0.49	NO	-0.92	NO
Cyprus	0.90	-0.75	0.15	NO	NO	NO	0.50	-0.059	0.44	0	0.67	NO
Czechia	0.000	NO	0.000	NO	-0.005	NO	0.008	-0.17	-0.16	-0.003	-0.30	NO
Denmark (KP)	0.015	-0.020	-0.005	NO	-0.082	-7.6	0.92	-0.91	0.012	-0.26	-0.090	IE, NO
Denmark (Convention)	0.015	-0.020	-0.005	NO	-0.082	-7.6	0.92	-0.91	0.012	-0.26	-0.090	-0.045
Estonia	0.000	IE	0.000	NO	0.11	-6.1	IE, NO	-0.29	-0.29	-0.088	-0.44	-6.1
European Union (KP)	0.040	-0.027	0.012	0.000	0.013	-5.7	0.12	-0.27	-0.14	-0.016	-0.86	-5.8
European Union (Convention)	0.040	-0.027	0.012	0.000	0.013	-5.6	0.12	-0.27	-0.14	-0.016	-0.86	-5.8
Finland	0.000	0.000	0.000	IE	-0.17	-6.5	0.11	-0.64	-0.53	-0.004	-0.46	-6.8
France (KP)	0.081	-0.083	-0.002	NE	0.061	IE	0.021	-0.30	-0.28	-0.020	-1.1	NO
France (Convention)	0.081	-0.083	-0.002	NE	0.061	IE	0.021	-0.30	-0.28	-0.020	-1.1	NO
Germany	0.007	-0.007	0.000	NA	-0.001	-8.1	0.40	-0.64	-0.24	IE, NO	-1.0	-8.1
Greece	0.061	-0.067	-0.006	NO	NO	-10	NO	-0.007	-0.007	NO	-0.71	NO
Hungary	0.007	-0.011	-0.003	NO	0.028	NO	0.27	-0.23	0.046	-0.066	-0.74	NO
Iceland	NO	NO	NO	NO	0.17	-7.9	0.11	-0.77	-0.67	IE, NA, NO	0.10	-7.9
Ireland	0.027	-0.007	0.019	NO	0.037	NO	NO	NO	NO	NO	NO	NO
Italy	0.060	-0.097	-0.038	NO	0.091	-10	NO	-0.26	-0.26	NO	-1.8	NO
Japan	IE	-0.013	-0.013	NA	-0.12	-2.0	0.27	-0.18	0.092	-0.078	IE	-2.5
Kazakhstan	0.007	NO	0.007	0.007	-0.32	NO	NO	NO	NO	NO	NO	NO
Latvia	0.002	-0.001	0.001	0.000	NA	-7.9	E, NA, NE, NO	-0.013	-0.013	-0.11	-0.049	-7.9
Liechtenstein	NO	NO	NO	NO	NO	-9.5	0.24	-0.40	-0.16	-0.006	-0.28	-9.5
Lithuania	0.008	-0.002	0.006	NA	0.22	IE	IE, NE, NO	-0.086	-0.086	-0.041	-0.23	IE, NO
Luxembourg	0.016	-0.022	-0.006	NO	0.000	NO	0.23	-0.38	-0.14	-0.023	-1.2	NO
Malta	0.20	NO	0.20	NE	0.010	NO	0.004	NO	0.004	NE, NO	-0.37	NO
Monaco	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
Netherlands	NA	NA	NA	NA	NA	-3.6	0.47	-0.71	-0.25	-0.034	-0.53	-3.7
New Zealand	0.010	0	0.010	0	0.000	-9.9	0.41	-0.031	0.37	0.000	-0.46	-10
Norway	0.005	NO	0.005	NO	0.017	-7.9	0.018	-1.3	-1.2	-2.1	1.0	-7.9
Poland	0.035	IE	0.035	NO	-0.001	-1.0	NO	-0.001	-0.001	NO	-0.45	1.0
Portugal	0.031	-0.013	0.018	NO	0.007	NO	0.15	-0.37	-0.21	-0.028	-0.69	NO
Romania	0.038	IE	0.038	-0.004	0.074	-5.0	0.22	-0.18	0.035	0.000	-0.13	NO
Russian Federation	0.013	0	0.013	NO	NO	-5.9	NO	0	0	0	-1.6	NO
Slovakia	0.21	-0.007	0.20	NA	0.015	NO	NA, NO	-0.009	-0.009	0	-0.65	NO
Slovenia	0.37	-0.047	0.33	NE, NO	0.006	-10	0.74	-0.51	0.24	-0.13	-0.52	NO
Spain	0.031	IE	0.031	NA	0.026	NO	0.097	-0.041	0.056	-0.004	-0.57	NO
Sweden	0.024	IE	0.024	0.000	-0.092	-6.2	0.094	-0.43	-0.34	-0.16	-0.24	-1.8
Switzerland	0.029	NO	0.029	NO	0.52	-9.5	0.098	-0.020	0.078	-0.001	-0.21	-8.9
Turkey	0.001	IE	0.001	NO	0.000	-0.010	0.17	-0.46	-0.29	-0.095	-0.23	NO
Ukraine	0.044	-0.051	-0.007	NA	-0.35	-5.0	NA, NO	-4.0	-3.95	NA, NO	1.00	NO
United Kingdom of Great Britain and Northern Ireland (KP)	0.000	0.000	0.000	NO	-0.34	-5.0	0.072	IE, NO	0.072	IE, NO	-1.3	-5.0
United Kingdom of Great Britain and Northern Ireland (Convention)	0.000	0.000	0.000	NO	-0.34	-5.0	0.072	IE, NO	0.072	IE, NO	-1.3	-5.0
United States of America	NE	NE	NE	NE	0.091	-14	IE, NE	-0.71	-0.71	-0.30	-0.065	-14

[a] The signs for estimates of gains in carbon stocks are positive (+) and of losses in carbon stocks are negative (–).

[b] Where Parties directly estimate emissions and removals rather than carbon stock changes, they may use notation keys only in the stock change columns.

[c] CSC = carbon stock change.

[d] Carbon stock gains and losses should be listed separately except in cases where, due to the methods used, it is technically impossible to separate information on gains and losses.

[e] For category cropland remaining cropland this column only includes changes in perennial woody biomass.

[f] DOM = dead organic matter.

[g] No reporting on DOM pools is required for category cropland remaining cropland.

[h] When Parties cannot estimate carbon stock changes for organic and mineral soil separately, these should be reported under mineral soils.

[i] Parties who wish to do so may report annual on-site CO_2-C emissions/removals and off-site CO_2-C emissions from drained and rewetted organic soils here.

Table 4.4

Grassland - AD, IEFs, carbon stock changes in pools and net CO_2 emissions/removals (2018)[a, b]

	Grassland remaining grassland						Land converted to grassland					
	IEF (t C/ha)											
	CSC[c] in living biomass/area[d]			Net CSC[c] in DOM[e]/area[f]	Net CSC[c] in soils/area[g, h]		CSC[c] in living biomass/area[d]			Net CSC[c] in DOM[e]/area[f]	Net CSC[c] in soils/area[g, h]	
	Gains	Losses	Net Change		Mineral soils	Organic soils	Gains	Losses	Net Change		Mineral soils	Organic soils
IPCC default EF												
Australia	0.003	IE	0.003	0.001	0.001	IE	IE, NA, NO	-0.65	-0.65	-0.054	-0.087	-5.0
Austria	NO	NO	NO	NO	0.002	-6.4	0.25	-0.81	-0.56	-0.34	0.92	NO
Belarus	NA	NA	NA	NA	NA	NE	NE	NE	NE	NE	NE, NO	IE, NE
Belgium	NO	NO	NO	NO	0.18	-1.9	NO	-0.29	-0.29	-0.036	1.7	NO
Bulgaria	0.022	-0.021	0.000	NE	-0.015	NO	0.11	-0.027	0.079	NE, NO	0.95	NO
Canada	NA, NO	NA, NO	NA, NO	NA, NO	NE, NO	NE, NO	NO	NO	NO	NO	NO	NO
Croatia	NO	NO	NO	NO	NO	-2.5	0.009	-0.020	-0.012	NO	1.0	NO
Cyprus	1.5	-1.2	0.25	NO	NO	NO	1.2	-0.010	1.2	0.030	0.90	NO
Czechia	NO	NO	NO	NO	0.024	NO	0.074	-0.046	0.027	-0.001	0.49	NO
Denmark (KP)	0.15	-0.42	-0.28	NO	IE	-6.5	0.22	-0.36	-0.14	-0.073	0.010	-8.9
Denmark (Convention)	0.042	-0.12	-0.079	NO	IE, NO	-5.6	0.22	-0.36	-0.14	-0.073	0.010	-8.9
Estonia	NO	NO	NO	NO	NO	-0.29	0.062	-0.041	0.021	-0.11	0.46	-5.2
European Union (KP)	0.078	-0.060	0.018	0.001	0.030	-2.8	0.15	-0.21	-0.060	-0.017	0.71	-4.4
European Union (Convention)	0.083	-0.064	0.019	0.001	0.031	-3.8	0.15	-0.22	-0.064	-0.017	0.72	-4.2
Finland	0.37	-0.067	0.30	NE	NA	-3.5	0.097	-0.50	-0.40	NA, NE	0.13	-3.5
France (KP)	0.13	-0.10	0.024	NE	-0.004	IE	0.12	-0.22	-0.10	-0.021	0.91	NO
France (Convention)	0.12	-0.095	0.022	NE	-0.003	IE	0.12	-0.22	-0.10	-0.021	0.91	NO
Germany	0.16	-0.15	0.005	NO	0.006	-6.7	0.66	-0.47	0.19	-0.001	1.2	-6.7
Greece	NO	0.000	0.000	NO	NO	NO	NO	-0.16	-0.16	0.000	0.71	NO
Hungary	NA	NA	NA	NA	0.000	NO	0.051	-0.73	-0.68	-0.20	0.78	NO
Iceland	0.000	IE, NA, NO	0.000	0.000	0.000	-5.7	0.12	IE, NA	0.12	0.001	0.46	-5.7
Ireland	NO	NO	NO	NO	0.15	-6.8	0.047	-0.40	-0.36	-0.035	0.029	-3.9
Italy	0.45	-0.36	0.086	0.004	0.019	-2.5	NO	NO	NO	NO	1.2	NO
Japan	NA	NA	NA	NA	0.11	-0.13	0.30	-0.61	-0.32	-0.26	IE, NO	-0.19
Kazakhstan	0.002	NO	0.002	0.002	0.019	NO	NO	NO	NO	NO	NO	NO
Latvia	NA	-0.001	-0.001	-0.005	NA	-6.1	IE, NE, NO	-0.016	-0.016	-0.027	NA, NE, NO	-4.2
Liechtenstein	0.073	-0.070	0.003	NO	0.025	-7.5	0.43	-1.3	-0.84	-0.33	0.33	-9.4
Lithuania	NA	NA	NA	NA	NA	IE	0.067	IE, NE, NO	0.067	0.035	0.31	-0.002
Luxembourg	NO	NO	NO	NO	NO	NO	0.56	-0.67	-0.11	-0.048	1.4	NO
Malta	0.000	NE, NO	0.000	NE, NO	0.003	NO	NO	NO	NO	NE, NO	0.27	NO
Monaco	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
Netherlands	0.038	-0.034	0.004	NA	0.003	-4.1	0.76	-0.82	-0.057	-0.13	0.73	-3.8
New Zealand	0.008	-0.004	0.004	0.000	-0.001	-2.2	0.14	-3.5	-3.34	-0.35	0.53	-1.9
Norway	0.33	-0.17	0.16	NO	-0.059	-3.6	0.62	-1.5	-0.89	-3.0	1.9	-3.6
Poland	NO	NO	NO	NO	-0.006	-0.25	0.21	IE, NO	0.21	NO	1.0	-0.25
Portugal	NO	NO	NO	NO	0.23	NO	0.053	-0.24	-0.18	-0.011	-0.44	NO
Romania	0.095	NE, NO	0.095	NE	NE	0.25	0.003	-0.27	-0.27	NE, NO	0.023	NO
Russian Federation	NA	NA	NA	NA	NA, NO	-5.8	0.10	NA, NO	0.10	0.091	0.68	-5.8
Slovakia	NA	NA	NA	NA	NA	NO	0.003	-0.16	-0.16	-0.021	0.71	NO
Slovenia	0.37	-0.13	0.23	0.065	-0.009	NO	0.052	-0.54	-0.49	0.007	0.61	NO
Spain	NE	NE	NE	NA	NE	NO	IE, NO	-0.60	-0.60	-0.053	0.56	NO
Sweden	0.26	IE	0.26	0.17	-0.050	-1.7	0.13	-0.32	-0.19	-0.24	0.083	-1.5
Switzerland	0.032	-0.010	0.022	NO	-0.001	-9.1	0.11	-0.85	-0.74	-0.20	0.42	-8.9
Turkey	NA	NA	NA	NA	NA	-0.003	0.006	-2.4	-2.4	-0.29	-0.071	NO
Ukraine	NA, NO	NA, NO	NA, NO	NA, NO	0.006	-0.25	NA	NA	NA	NA	0.66	NO
United Kingdom of Great Britain and Northern Ireland (KP)	0.002	-0.003	-0.001	NO	0.12	-0.034	0.010	-0.10	-0.09	-0.010	0.63	-0.25
United Kingdom of Great Britain and Northern Ireland (Convention)	0.002	-0.003	-0.001	NO	0.12	-0.034	0.010	-0.10	-0.09	-0.010	0.63	-0.25
United States of America	IE	-0.002	-0.002	-0.003	0.00	-3.4	IE, NE	-0.16	-0.16	-0.053	0.57	-3.0

[a] The signs for estimates of gains in carbon stocks are positive (+) and of losses in carbon stocks are negative (–).

[b] Where Parties directly estimate emissions and removals rather than carbon stock changes, they may use notation keys only in the stock change columns.

[c] CSC = carbon stock change.

[d] Carbon stock gains and losses should be listed separately except in cases where, due to the methods used, it is technically impossible to separate information on gains and losses.

[e] DOM = dead organic matter.

[f] No reporting on DOM pools is required for category grassland remaining grassland.

[g] When Parties cannot estimate carbon stock changes for organic and mineral soil separately, these should be reported under mineral soils.

[h] Parties who wish to do so may report annual on-site CO_2-C emissions/removals and off-site CO_2-C emissions from drained and rewetted organic soils here.

Table 4.5

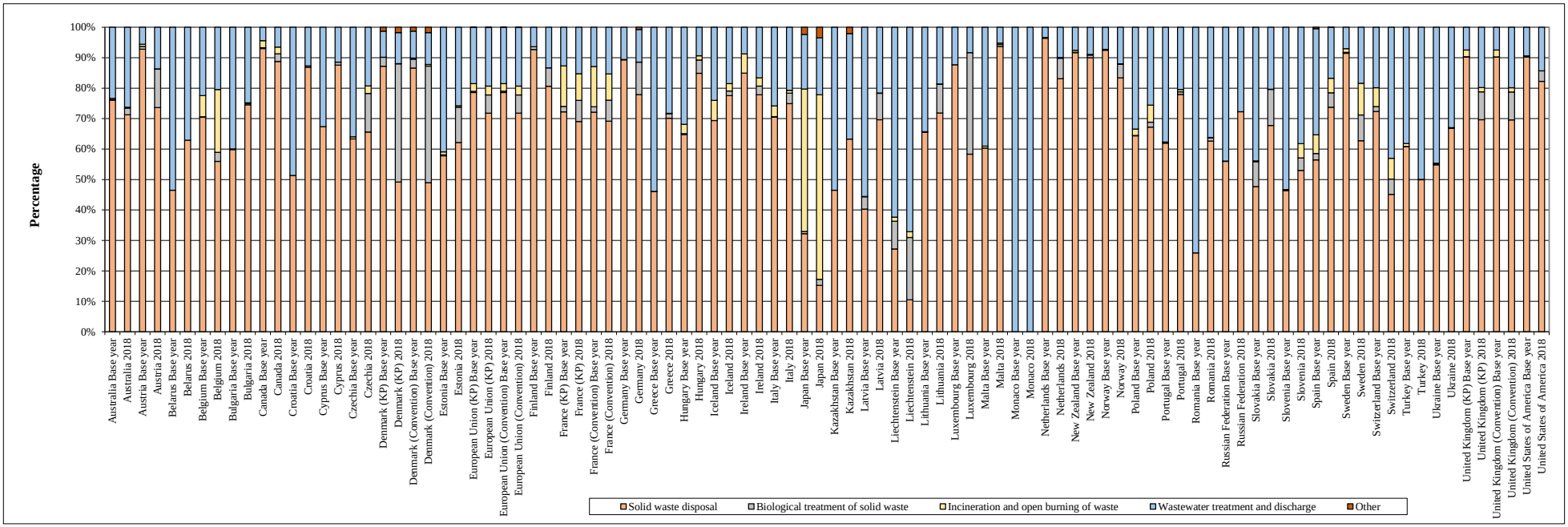
Land Area (2018)

Area (kha)	CRF						Total	FAO[a]	difference	FAO[a]	difference
	Forest land	Cropland	Grassland	Wetlands	Settlements	Other land		Total country area	%	Forest	%
Australia	137 654	39 935	516 011	13 020	1 521	60 692	768 833	774 122	0.69	124 751	-9.37
Austria	4 046	1 405	1 335	153	568	879	8 387	8 388	0.01	3 869	-4.37
Belarus	9 575	5 823	2 637	137	885	497	19 554	20 760	6.17	8 634	-9.83
Belgium	706	960	652	54	681	NO	3 053	3 053	0.01	683	-3.19
Bulgaria	3 923	3 676	2 555	232	534	181	11 100	11 100	0.00	3 823	-2.54
Canada	225 736	47 346	6 354	484	985	NE, NO	280 905	987 975	251.71	347 069	53.75
Croatia	2 375	1 533	1 153	75	285	238	5 659	8 807	55.62	1 922	-19.07
Cyprus	163	246	131	4.9	71	3.6	620	925	49.21	173	5.77
Czechia	2 673	3 193	1 011	167	843	IE, NA, NO	7 887	7 887	0.00	2 667	-0.24
Denmark (KP)	639	2 817	175	118	530	26	4 306		–		–
Denmark (Convention)	639	2 817	417	120	536	216 386	220 914	4 292	-98.06	612	-4.24
Estonia	2 446	1 003	275	28	348	38	4 138	4 534	9.56	2 232	-8.76
European Union (KP)	166 791	124 737	93 827	24 904	30 832	17 775	458 866		–		–
European Union (Convention)	166 637	124 639	88 863	23 936	30 773	12 460	447 309	441 569	-1.28	161 081	-3.33
Finland	21 866	2 490	244	6 440	1 494	1 310	33 843	33 845	0.00	22 218	1.61
France (KP)	23 677	18 106	14 152	1 158	5 788	980	63 860		–		–
France (Convention)	24 659	18 166	15 154	1 179	5 839	1 550	66 547	54 909	-17.49	16 989	-31.10
Germany	10 997	12 657	6 772	738	4 590	37	35 790	35 758	-0.09	11 419	3.84
Greece	3 468	3 075	5 472	301	605	273	13 193	13 196	0.02	4 054	16.89
Hungary	2 055	5 202	1 197	264	584	2.5	9 304	9 303	-0.01	2 069	0.67
Iceland	141	87	3 694	966	36	5 315	10 237	10 300	0.61	49	-65.07
Ireland	773	780	4 156	1 226	125	52	7 112	7 028	-1.18	754	-2.48
Italy	9 469	8 958	8 178	586	2 288	655	30 134	30 134	0.00	9 297	-1.82
Japan	24 915	4 244	949	1 348	3 870	2 472	37 797	37 797	0.00	24 958	0.17
Kazakhstan	13 573	35 939	188 781	8 925	2 275	22 998	272 491	272 490	0.00	3 309	-75.62
Latvia	3 245	1 470	1 029	400	309	5.4	6 459	6 457	-0.03	3 356	3.42
Liechtenstein	6.2	1.7	4.9	0.38	1.9	1.0	16	16	-0.28	6.9	10.46
Lithuania	2 211	2 040	1 524	364	381	7.6	6 529	6 529	0.00	2 180	-1.42
Luxembourg	96	60	75	1.2	26	0.054	259	259	0.15	87	-9.87
Malta	0.072	4.1	10	0.025	9.1	0.56	24	32	33.36	0.35	381.94
Monaco	NO	NO	NO	NO	0.20	NO	0.20		–		–
Netherlands	361	833	1 459	822	638	41	4 153	4 154	0.02	376	4.09
New Zealand	9 905	476	14 650	762	236	896	26 925	26 771	-0.57	10 152	2.49
Norway	12 142	938	235	3 722	703	14 638	32 378	62 522	93.10	12 112	-0.25
Poland	9 434	13 918	4 176	1 374	2 286	82	31 271	31 268	-0.01	9 435	0.01
Portugal	4 368	2 392	643	198	510	1 129	9 239	9 223	-0.18	3 182	-27.16
Romania	6 929	8 566	5 023	1 152	1 750	419	23 839	23 840	0.00	6 861	-0.98
Russian Federation	901 988	94 768	122 606	228 233	16 142	359 666	1 723 402	1 709 825	-0.79	814 931	-9.65
Slovakia	2 026	1 527	852	94	238	167	4 904	4 903	-0.01	1 940	-4.25
Slovenia	1 208	246	411	14	116	32	2 027	2 048	1.02	1 248	3.31
Spain	15 688	20 015	11 904	420	1 465	1 158	50 651	50 594	-0.11	18 418	17.40
Sweden	28 198	2 785	522	7 385	1 915	4 324	45 129	44 743	-0.86	28 073	-0.44
Switzerland	1 264	392	1 376	188	331	579	4 129	4 129	0.00	1 254	-0.78
Turkey	22 986	27 133	24 106	1 972	942	1 517	78 656	78 535	-0.15	11 715	-49.04
Ukraine	10 686	34 952	7 577	3 357	2 828	906	60 305	60 355	0.08	9 657	-9.63
United Kingdom of Great Britain and Northern Ireland (KP)	3 609	4 692	15 048	169	1 820	421	25 758		–		–
United Kingdom of Great Britain and Northern Ireland (Convention)	3 609	4 692	15 048	169	1 824	421	25 764	24 361	-5.44	3 144	-12.89
United States of America	280 848	161 900	286 444	22 111	6 468	NA	757 771	983 151	29.74	310 095	10.41

[a] Source of international statistics: FAOSTAT data, downloaded on 24 May 2020 from http://www.fao.org/faostat/en/#data/RL. At the time of the download data for 2018 was not available, therefore, data for 2017 is shown in the table.

Figure 5.1

Contribution of subsectors to total GHG emissions in the Waste sector[a, b]



[a] In accordance with the UNFCCC reporting guidelines on annual inventories of Annex I Parties the year 1990 should be the base year for the estimation and reporting of inventories. However, in accordance with decisions 9/CP.2, 11/CP.4, and 7/CP.12 some Parties with economies in transition use base years other than 1990: Bulgaria (1988), Croatia (1990), Hungary (average of 1985 to 1987), Poland (1988), Romania (1989) and Slovenia (1986).

[b] Indirect CO_2 emissions are excluded from the totals in this graph.

Table 5.1a

Solid waste disposal on land, biological treatment of solid waste, incineration and open burning of waste and wastewater treatment and discharge (2018)

	Solid waste disposal							Biological treatment of solid waste										
	CH_4							CH_4						N_2O				
	Methods and EF used		Share of national total[a]	Emissions per capita[b]	CH_4 IEF			Methods and EF used		Share of national total[a]	Emissions per capita[b]	IEF		Methods and EF used		Share of national total[a]	Emissions per capita[b]	IEF	
	Methods	EF			Managed	Unmanaged	Uncategorized	Methods	EF			Composting	Anaerobic digestion	Methods	EF			Composting	Anaerobic digestion
			(%)	(kg CO_2 eq.)	(t/t)	(t/t)	(t/t)			(%)	(kg CO_2 eq.)	g/kg	g/kg			(%)	(kg CO_2 eq.)	g/kg	g/kg
IPCC default EF																			
Australia	T2, T3	D	1.62	359	0.018	NO	NO	T1	CS	0.02	4.4	0.75	NE, NO	T1	CS	0.03	6.8	0.096	NE, NO
Austria	T2	CS, D	1.32	118	0.26	NO	NO	T1, T2	CS, D	0.10	9.2	1.8	107	T2	CS	0.12	11	0.25	NA, NO
Belarus	T1	CS, D	4.31	419	NO	0.042	NE			–	–	NO	NO			–	–	NO	NO
Belgium	T2	D	0.65	68	0.030	NO	NO	T1	CS	0.01	1.4	0.75	NO	T1	CS	0.02	2.2	0.096	NO
Bulgaria	T2	CS, D	4.74	392	0.028	0.36	NO	T1	D	0.02	1.4	10	NO	T1	D	0.01	0.98	0.60	NO
Canada	CS	CS	2.15	422	0.034	0.42	NO	T1	D	0.04	7.0	4.0	NA, NE	T1	D	0.03	5.0	0.24	NA, NE
Croatia	T2	CS	7.45	433	0.046	0.036	NO	T1	D	0.02	1.2	4.0	IE	T1	D	0.01	0.83	0.24	NA
Cyprus	T2	D	5.73	577	0.024	0.058	NO	T1	D	0.04	3.8	4.0	NO	T1	D	0.03	2.7	0.24	NO
Czechia	T1	CS, D	2.92	352	0.051	NO	NO	CS, D, T1	CS, D	0.51	62	4.0	IE, NE	T1	D	0.05	6.2	0.24	IE, NO
Denmark (KP)	CS, T2	CS, D	1.16	97	0.032	NO	NO	CS, T1	CS, OTH	0.74	62	NO	NE, NO	CS, T1	CS, OTH	0.17	14	NO	NA, NO
Denmark (Convention)	CS, T2	CS, D	1.13	97	0.032	0.022	NE, NO	CS, T1	CS, OTH	0.72	61	NO	NE, NO	CS, T1	CS, OTH	0.17	14	NO	NA, NO
Estonia	T2	D	1.00	151	0.081	NO	NO	T1	D	0.11	16	10	NE, NO	T1	D	0.08	12	0.60	NE, NO
European Union (KP)			2.35	1.5	0.030	0.60	NA, NO			0.13	0.081	4.3	60			0.07	0.041	0.26	0.023
European Union (Convention)			2.34	1.5	0.030	0.63	NA, NO			0.13	0.081	4.3	60			0.07	0.041	0.26	0.023
Finland	T2	CS, D	2.60	266	0.027	NO	NO	T1	D	0.12	12	5.6	1.0	T1	D	0.07	7.5	0.34	NA
France (KP)	T2	CS, D	2.70	0.18	0.036	NO	NO	T2	CS	0.23	0.015	8.2	5.9	T2	CS	0.04	0.003	0.14	NA
France (Convention)	T2	CS, D	2.70	0.18	0.036	NO	NO	T2	CS	0.23	0.015	8.2	5.9	T2	CS	0.04	0.003	0.14	NA
Germany	T2	CS	0.88	91	0.407	NO	NO	T2	CS	0.08	8.7	1.4	49	T2	CS	0.04	3.8	0.074	0.067
Greece	T2	CS, D	3.61	305	0.017	0.38	NO	D	D	0.06	5.1	4.0	NE	D	D	0.02	1.5	0.24	NO
Hungary	T2	D	4.62	299	0.016	NO	NO	D, T1	D	0.18	11	10	160	T1	D	0.06	4.1	0.60	NA, NO
Iceland	T2	CS, D	4.41	615	0.042	0.031	NO	T2	CS, D	0.05	6.9	4.0	NO	T1	D	0.04	4.9	0.24	NO
Ireland	T2	CS, D	1.14	144	0.091	IE	NO	T1	D	0.02	3.1	4.0	NO	T1	D	0.02	2.2	0.24	NO
Italy	T2	CS	3.21	227	0.056	NO	NO	D	CS, D	0.03	2.0	1.6	2.0	D	D	0.12	8.5	0.60	NA, NO
Japan	T3	CS	0.24	23	0.28	NO	0.83	T2	CS	0.01	0.70	2.8	NE	T2	CS	0.02	2.3	0.78	NO
Kazakhstan	M	CS, M	1.08	234	0.021	0.040	NO			–	–	NO	NO			–	–	NO	NO
Latvia	T2	CS, D	3.26	197	0.020	NO	NO	D	D	0.24	14	4.0	NO	D	D	0.17	10	0.24	NO
Liechtenstein	T2	CS	0.06	2.6	NO	NO	NO	CS	CS	0.07	3.2	1.9	NO	CS	CS	0.04	1.9	0.094	NO
Lithuania	T2	D	3.27	236	0.061	0.081	NO	T1	D	0.30	22	10	NE	T1	D	0.13	9.4	0.60	NO
Luxembourg	T1	D	0.45	68	0.14	NO	NO	T1	D	0.21	31	10	IE, NE	T1	D	0.05	8.0	0.60	NA
Malta	M, T2	M	7.02	311	0.023	NA	NO	T1	D	0.05	2.2	NO	0.80			–	–	NO	NA, NO
Monaco			–	–	NO	NO	NO			–	–	NO	NO			–	–	NO	NO
Netherlands	T2	CS	1.32	–	0.033	NO	NO	T1	CS	0.06	–	0.82	3.1	T1	CS	0.05	–	0.080	0.046
New Zealand	T2	CS, D	4.63	747	0.017	0.014	NO	T1	D	0.03	4.2	4.0	NO	T1	D	0.02	3.0	0.24	NO
Norway	T2	D	1.85	182	4.9	NO	NO	T1	D	0.06	6.0	4.0	0.80	T1	D	0.04	3.8	0.24	NO
Poland	T2	CS, D	2.08	223	0.039	NO	NO	T1	D	0.03	3.1	6.7	NA, NO	T1	D	0.02	2.2	0.40	NA, NO
Portugal	T2	CS, D	5.28	347	0.037	NO	NA, NO	T1	D	0.04	2.4	10	2.0	T1	D	0.02	1.5	0.60	NO
Romania	T2	CS, D	3.13	187	0.014	NO	NA	T1	D	0.03	1.7	10	NO	T1	D	0.02	1.2	0.60	NO
Russian Federation	T2, T3	CS, D	3.18	481	0.039	0.025	NO	T1	D	0.00	0.045	8.0	NO	T1	D	0.00	0.032	0.48	NO
Slovakia	T2	CS, D	2.63	209	0.035	NO	NO	T1	D	0.27	21	10	NO	T1	D	0.19	15	0.60	NO
Slovenia	T2	CS, D	1.34	112	0.079	NO	NO	T1	D	0.06	5.1	4.0	NO	T1	D	0.04	3.7	0.24	NO
Spain	T2	CS, D, OTH	2.97	213	0.031	NO	NO	T1	D	0.11	8.1	4.0	88	T1	D	0.08	5.5	0.24	NE, NO
Sweden	T2	CS, D	1.51	76	0.050	NO	NO	T1, T2	CS, D	0.15	7.8	11	124	T1	D	0.05	2.5	0.69	NA, NO
Switzerland	T2	CS, D	0.65	36	NO	NO	NO	T2	CS	0.05	2.9	1.0	0.18	T2	CS	0.02	1.0	0.050	NO
Turkey	T2	CS, D	1.70	108	0.002	0.047	NO	T1	D	0.00	0.15	4.0	NO	T1	D	0.00	0.10	0.24	NO
Ukraine	T3	CS, D	2.40	182	0.026	0.029	NO	T1	D	0.00	0.33	4.0	NA	T1	D	0.00	0.30	0.30	NA
United Kingdom of Great Britain and Northern Ireland (KP)	T2	CS	3.14	220	0.014	NO	NO	T1	D	0.26	18	10	1.1	T1	D	0.16	11	0.60	NO
United Kingdom of Great Britain and Northern Ireland (Convention)	T2	CS	3.13	220	0.014	NO	NO	T1	D	0.26	18	10	1.1	T1	D	0.16	11	0.60	NO
United States of America	CS	CS	1.66	332	0.021	NO	NO	D	D	0.04	7.4	4.0	IE, NE	D	D	0.03	6.6	0.30	IE, NE

[a] The national total includes indirect CO_2 emissions from the atmospheric oxidation of CH_4, CO and NMVOCs for the following Parties: Canada, Czechia, Denmark (KP), Denmark (Convention), European Union (KP), European Union (Convention), Finland, Japan, Latvia, Netherlands, Portugal and Switzerland.

[b] Calculated using population data from CRF Table 5.D.

Table 5.1b

Solid waste disposal on land, biological treatment of solid waste, incineration and open burning of waste and wastewater treatment and discharge (2018)

	Activity data		Incineration and open burning of waste						Wastewater treatment and discharge									
			CO_2						CH_4						N_2O			
	Population (million)		Methods and EF used		Share of national total[b]	Emissions per capita[c]	IEF		Methods and EF used		Share of national total[b]	Emissions per capita[c]	CH_4 IEF		Methods and EF used		Share of national total[b]	Emissions per capita[c]	N_2O IEF	
	CRF	World Bank[a]	Methods	EF	(%)	(kg CO_2 eq.)	Waste incineration kg/t	Open burning of waste kg/t	Methods	EF	(%)	(kg CO_2 eq.)	Domestic kg/kg	Industrial kg/kg	Methods	EF	(%)	(kg CO_2 eq.)	Domestic kg N_2O-N/kg N	Industrial kg N_2O-N/kg N
IPCC default EF[d]																			0.005	
Australia	25	25	T2	CS	0.01	1.2	5 469	NO	T2, T3	CS, D	0.51	113	0.096	0.080	CS	D	0.09	19	0.007	IE
Austria	8.8	8.8	T2	CS	0.00	0.23	2 052	NO	T2	CS, D	0.03	2.9	0.16	NA	CS	CS, D	0.21	19	0.031	0.005
Belarus	9.5	9.5			–	–	NE, NO	NO	T1	D	2.30	223	NE, NO	0.10	T1	D	0.24	24	0.010	NE
Belgium	11	11	T1, T3	PS	0.24	25	4 249	NO	CR, T1	CR, D	0.15	16	NA	NA	D	D	0.09	9.2	NA	NA
Bulgaria	7.0	7.0	T1	D	0.01	0.97	1 540	NO	T2	D	1.33	110	0.14	0.040	T1	D	0.24	20	0.005	NA
Canada	37	37	T1, T2, T3	CS, D	0.03	5.6	532	NE, NO	CS, T3	CS, D, PS	0.09	18	NA	NA	D	D	0.07	13	0.005	NE
Croatia	4.1	4.1			–	–	NO	NO	T1	D	0.71	42	0.059	0.003	T1	D	0.37	22	0.005	NA
Cyprus	0.88	1.2			–	–	NO	NO	T1	D	0.56	56	0.032	0.079	OTH, T1	D, OTH	0.19	19	0.005	NE
Czechia	11	11	T1	D	0.11	13	1 478	NO	CS, T1	CS, D	0.70	85	0.16	0.016	T1	CS, D	0.15	19	0.005	NE
Denmark (KP)	5.8				–	–	NO	NO	CS	CS	0.11	8.8	0.073	IE, NO	CS	CS	0.14	11	0.040	0.003
Denmark (Convention)	5.8	5.8	T1	CS	0.01	0.55	294	154	CS, NA	CS, NA	0.10	8.7	0.073	IE, NA, NE, NO	CS, T2, T3	CS, D	0.14	12	0.033	0.005
Estonia	1.3	1.3	T1, T2	D	0.01	0.82	1 610	344	T1	D	0.25	38	0.066	0.20	T1	D	0.16	25	0.005	NO
European Union (KP)	67 401				0.07	0.046	761	5.2			0.46	0.29	0.11	0.025			0.17	0.10	0.005	0.022
European Union (Convention)	67 401	503			0.07	0.046	762	5.2			0.46	0.29	0.11	0.025			0.17	0.10	0.005	0.022
Finland	5.5	5.5			–	–	IE, NO	NE, NO	CS, T2	CS, D	0.30	30	0.043	0.001	CS, T1	D	0.13	14	0.005	0.005
France (KP)	66 971		T1, T2	CS, D	0.32	0.021	3 634	98	T1	D	0.51	0.034	0.091	0.67	T1	D	0.09	0.006	0.002	NA
France (Convention)	67 559	67	T1, T2	CS, D	0.32	0.021	3 633	111	T1	D	0.51	0.034	0.091	0.67	T1	D	0.09	0.006	0.002	NA
Germany	83	83	T1	CS	–	–	NO	NO	CS, D, T2	CS, D	0.06	6.6	0.19	0.001	CS, D, T2	CS, D	0.06	6.0	0.006	IE
Greece	11	11	D	CS, D	0.00	0.33	140	NO	CS, D	CS, D	1.14	96	0.023	0.20	D	CS	0.32	27	0.005	NE
Hungary	9.8	9.8	T2, T3	CS, D	0.07	4.7	1 270	NO	T1	D	0.39	25	0.12	0.013	CS	D	0.12	7.7	0.006	NE
Iceland	0.35	0.35	T1, T2	D	0.13	18	437	NO	T1	CS, D	0.93	130	0.12	0.025	T1	D	0.12	16	0.005	IE
Ireland	4.8	4.9	T1	D	0.04	4.9	2 933	1 387	T1, T2	CS, D	0.08	10	0.061	IE, NO	T1	D	0.16	20	0.005	IE
Italy	60	60	D, T1	CS, D	0.02	1.5	769	5.9	T1	D	0.57	40	0.16	0.25	T1	CR, D	0.31	22	0.005	1.0
Japan	127	127	CS	CS	0.83	80	563	134	CS, D	CS, D	0.13	13	NA	NA	CS, D	CS, D	0.16	16	NA	0.005
Kazakhstan	18	18			–	–	NO	NO	T1	D	0.50	108	0.13	0.075	T1	D	0.09	20	0.005	NO
Latvia	1.9	1.9	D	D	0.00	0.21	1 646	NO	T1, T2	CS, PS	0.74	45	0.081	0.007	D	D	0.27	16	0.005	0.005
Liechtenstein	0.038	0.038	CS	CS	0.01	0.26	NO	244	CS	CS	0.01	0.42	NA	IE, NO	D	D	0.35	16	NA	IE, NO
Lithuania	2.8	2.8	T1	D	0.00	0.31	965	NO	T1	D	0.63	46	0.055	IE, NA	T1	D	0.21	15	0.005	NA
Luxembourg	0.70	0.61			–	–	IE, NO	NO	T1	CS	0.03	3.8	0.16	NO	T1	D, PS	0.04	6.0	0.002	0.003
Malta	0.49	0.48	T1	D	0.02	1.1	110	NO	D	CS	0.11	4.9	0.008	IE, NO	D	D	0.28	12	0.002	IE
Monaco	0.039	0.039			–	–	IE, NO	NO	T3	CS, D	0.74	17	0.018	IE	T1	D	0.59	13	0.005	IE
Netherlands		17	CS	CS	–	–	IE, NA	NO	T1, T2	CS, D	0.12	–	0.051	0.002	T1, T2	D	0.04	–	IE	NE
New Zealand	4.9	4.8	T1	D	0.00	0.75	226	131	T1, T2	CS	0.31	50	0.032	0.023	T1, T2	CS, D	0.15	24	0.005	0.009
Norway	5.3	5.3	D	OTH	0.00	0.19	76	NE, NO	T1	CS, D	0.11	11	0.030	0.025	CS, T1	CS, D	0.15	15	0.009	NE
Poland	38	38	T1, T2	CS, D	0.15	17	759	NA	T1, T2	CS, D	0.61	65	0.14	0.033	T1	D	0.18	20	0.005	NA
Portugal	10	10	T1, T2	CS, D	0.05	3.1	1 049	NO	T2	CS, D	1.12	73	0.11	0.018	D	CS, D	0.27	18	0.004	IE
Romania	19	19	D	D	0.01	0.52	663	NO	D	D	1.35	81	0.13	0.015	D	D	0.46	27	0.005	NE
Russian Federation	147	144			–	–	IE, NO	NE, NO	T1, T2	CS, D	1.09	164	0.21	0.077	T1	CS, D	0.13	20	0.005	NO
Slovakia	5.4	5.4	T2	CS, D	0.00	0.087	117	NO	T1, T2	D	0.67	53	0.30	0.025	T1, T2	D	0.12	9.6	0.005	0.005
Slovenia	2.1	2.1	T1	D	0.12	9.9	2 381	NO	T1	CS, D	0.75	63	0.094	0.002	T1	D	0.22	18	0.005	NA
Spain	47	47			–	–	IE, NO	NO	T1, T2	CS, D	0.43	31	0.061	0.010	D	D	0.24	17	0.005	NE
Sweden	10	10	T3	PS	0.24	12	813	NE	T2	CS	0.06	2.9	0.21	1.8	T1	CS, D	0.39	20	0.021	0.005
Switzerland	8.5	8.5	T1, T2	CS	0.02	1.1	65	NO	T2	CS, D	0.41	22	0.26	IE	D	D	0.21	12	0.005	IE
Turkey	82	82	T2	CS, D	0.00	0.015	IE, NO	202	T2	CS	0.53	34	0.075	0.013	T1	D	1.17	74	0.014	IE
Ukraine	45	45	T1, T2	D	0.00	0.12	59	NE	T2	CS, D	0.86	65	0.11	0.027	CS, T1	CS, D	0.32	25	0.010	0.004
United Kingdom of Great Britain and Northern Ireland (KP)	66		T1, T2	CS, D	0.05	3.6	696	NE, NO	CS, T1	CS, D	0.74	52	0.019	0.18	T1	D	0.16	11	0.004	NE
United Kingdom of Great Britain and Northern Ireland (Convention)	66	66	T1, T2	CS, D	0.05	3.6	696	NE, NO	CS, T1	CS, D	0.74	52	0.019	0.18	T1	D	0.16	11	0.004	NE
United States of America	333	327			–	–	IE	NA	D	CS, D	0.21	43	0.11	0.047	D	CS, D	0.07	15	0.005	NE

[a] Source of population data: World Bank https://data.worldbank.org/indicator/SP.POP.TOTL, downloaded on 24 May 2020.

[b] The national total includes indirect CO_2 emissions from the atmospheric oxidation of CH_4, CO and NMVOCs for the following Parties: Canada, Czechia, Denmark (KP), Denmark (Convention), European Union (KP), European Union (Convention), Finland, Japan, Latvia, Netherlands, Portugal and Switzerland.

[c] Calculated using population data from CRF Table 5.D.

[d] Source of default emission factors: 2006 IPCC Guidelines for National Greenhouse Gas Inventories Volume 5 Chapter 6 Wastewater Treatment and Discharge, page 6.28.

Table 6.1

Selected values (forest parameters), elected activities under Article 3.4, accounting period, forest management cap[a]

	Minimum value for 'tree crown cover' (%)[b]	Minimum 'tree height' (m)[b]	Minimum area for 'Forest land' (ha)[b]	Cropland Management[c]	Grazing Land Management[c]	Revegetation[c]	Wetland drainage and rewetting[c]	Harvest Wood Products[c]	Accounting period[d]	FM CAP[e] (Mt CO_2 eq.)	Forest Management Reference Level (FMRL)[f] (Mt CO2 eq./yr)
Australia	20	2.0	0.20	X	X	X		X	Annually/CP	117	4.700
Austria	30	2.0	0.050					X	CP	22	-6.516
Belgium	20	5.0	0.50					X	CP	41	-2.499
Bulgaria	10	5.0	0.10					X	CP	32	-8.168
Croatia	10	2.0	0.10					X	CP	8.7	-6.289
Cyprus	10	5.0	0.30					X	CP	1.6	-0.157
Czechia	30	2.0	0.050					X	CP	56	-4.686
Denmark (KP)	10	5.0	0.50	X	X			X	Annually	20	0.409
Estonia	30	2.0	0.50					X	CP	11	-1.742
European Union (KP)	10-30	2.0-5.0	0.05-1.0	X	X	X	X	X	Annually/CP	1644	-306.706
Finland	10	5.0	0.50					X	CP	20	-20.466
France (KP)	10	5.0	0.50					X	CP	153	-67.41
Germany	10	5.0	0.10	X	X			X	CP	351	-22.418
Greece	25	2.0	0.30					X	CP	30	-1.830
Hungary	30	5.0	0.50					X	Annually	31	-1
Iceland	10	2.0	0.50			X		X	CP	1.0	0.154
Ireland	20	5.0	0.10	X	X			X	CP	16	−0.142
Italy	10	5.0	0.50	X	X			X	CP	146	-21.182
Japan	30	5.0	0.30	X	X	X		X			
Kazakhstan	10	2.0	0.050					X	CP		
Latvia	20	5.0	0.10					X	CP	7.4	-16.302
Liechtenstein	20	3.0	0.063					X	CP	0.064	0.100
Lithuania	30	5.0	0.10					X	CP	13	-4.552
Luxembourg	10	5.0	0.50					X	CP	3.6	-0.418
Malta	30	5.0	1.0					X	CP	0.55	-0.049
Monaco	10	5.0	0.50					X	CP	0.028	
Netherlands	20	5.0	0.50					X	CP	62	−1.464
New Zealand	30	5.0	1.0					X	CP	18	11.150
Norway	10	5.0	0.50	X	X			X	CP	15	-11.4
Poland	10	2.0	0.10					X	CP	162	-27.133
Portugal	10	5.0	1.0	X	X			X	CP	17	-6.83
Romania	10	5.0	0.25			X		X	CP	85	-15.444
Russian Federation	18	5.0	1.0					X			-
Slovakia	20	5.0	0.30					X	CP	21	0.358
Slovenia	30	2.0	0.25					X	CP	5.7	-3.171
Spain	20	3.0	1.0	X				X	CP	79	−23.100
Sweden	10	5.0	0.50					X	CP	20	-41.336
Switzerland	20	3.0	0.063					X	CP	15	0.220
Ukraine	30	5.0	0.10					X	CP	263	-48.7
United Kingdom of Great Britain and Northern Ireland (KP)	20	2.0	0.10	X	X		X	X	CP	225	-8.268

[a] As either reported by a Party in its report to facilitate the calculation of the assigned amount for the second commitment period under the Kyoto Protocol, submitted in accordance with decisions 2/CMP.8, annex I, and 6/CMP.9, or subsequently reviewed under Article 8 of the Kyoto Protocol and recorded in the initial review report and the compilation and accounting database.

[b] As reported by Party in accordance with paragraph 8(b) of the annex to decision 13/CMP.1 or paragraph 1(f) of Annex I to decision 2/CMP.8 and paragraph 21 of the annex to decision 2/CMP.7.

[c] An "X" indicates if any activity under Article 3.4 was elected for reporting, in accordance with paragraph 8 of the annex to decision 2/CMP.7 and paragraph 1(g) of Annex I to decision 2/CMP.8.

[d] Parties specified in their report to facilitate the calculation of the assigned amount for the second commitment period under the Kyoto Protocol whether they intend to account for activities under Article 3, paragraph 3 and 4, of the Kyoto Protocol 'annually' or over the second commitment period, in accordance to paragraph 1(h) of Annex I to decision 2/CMP.8.

[e] In accordance with paragraph 13 of the annex to decision 2/CMP.7, for the second commitment period, additions to the assigned amount of a Party resulting from forest management under Article 3, paragraph 4, and from forest management project activities undertaken under Article 6, shall not exceed 3.5 per cent of the base year greenhouse gas emissions excluding land use, land-use change and forestry pursuant to Article 3, paragraphs 7 and 8, or any amendments thereto, times eight. The FM CAP was calculated on the basis of the base year or period emissions reported in the annual greenhouse gas inventory report due by 15 April 2015, as included in the information communicated as part of the report to facilitate the calculation of a Party's assigned amount for the second commitment period, and takes into account any corrections or adjustments made during the review process of that report under Article 8 of the Kyoto Protocol.

[f] The forest management reference level as inscribed in the appendix to the annex to decision 2/CMP.7, as contained in the intial review report for the second committment period under the Kyoto Protocol, when available.

Table 6.2(a)

Activity coverage in the reporting of information relating to activities under Article 3, paragraph 3, forest management under Article 3.4, and elected activities under Article 3.4[a]

	Afforestation and reforestation															Deforestation												
	Change in carbon pool reported[b]							Greenhouse gas sources reported[c]								Change in carbon pool reported[b]							Greenhouse gas sources reported[c]							
	Above-ground biomass	Below-ground biomass	Litter	Deadwood	Soil		HWP[e]	Fertilization[f]	Drained, rewetted and other soils[g]		Nitrogen mineralization in mineral soils[i]	Indirect N_2O emissions from managed soil[f]	Biomass burning[j]			Above-ground biomass	Below-ground biomass	Litter	Deadwood	Soil		HWP[e]	Fertilization[f]	Drained, rewetted and other soils[g]		Nitrogen mineralization in mineral soils[i]	Indirect N_2O emissions from managed soil[f]	Biomass burning[j]		
					Mineral	Organic[d]														Mineral	Organic[d]										
								N_2O	CH_4[h]	N_2O	N_2O	N_2O	CO_2[k]	CH_4	N_2O								N_2O	CH_4[h]	N_2O	N_2O	N_2O	CO_2[k]	CH_4	N_2O
Australia	R	R	R	R	R	R	R	IE	NO	NO	R	IE	R	R	R	R	R	R	R	R	R	NR	IE	NO	NO	R	IE			
Austria	R	R	R	R	R	NO	R	NO	NO	NO	R	NO	NO	NO	NO	R	R	R	R	R	NO	IO	NO	NO	NO	R	NO	NO	NO	NO
Belgium	R	R	R	R	R	NO	R	NO	NO	NO	R	NO	NO	NO	NO	R	R	R	R	R	NO	R	IE	NO	NO	R	NO	NO	NO	NO
Bulgaria	R	IE	R	NO	R	NO	R	NO	NO	NO	NO	NO	IE	R	R	R	IE	R	R	R	NO	R	NO	NO	NO	NO	NO	NO	NO	NO
Croatia	R	R	R	R	R	NO	NO	NO	NO	NO	NO	NO	R	R	R	R	R	R	R	R	NO	R	NO	NO	NO	R	NO	NO	NO	NO
Cyprus	R	R	R	NO	NR	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	R	R	R	NO	R	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
Czechia	R	R	R	R	R	R	R	NO	NO	NO	NO	NO	NO	NO	NO	R	R	R	R	R	R	R	NO	NO	NO	R	NO	NO	NO	NO
Denmark (KP)	R	R	R	R	R	R	R	IE	R	R	NO	R	NO	NO	NO	R	R	R	R	R	R	R	R	R	R	R	IE	NO	NO	NO
Estonia	R	R	R	R	R	R	R	NO	NE	NE	NO	NO	IE	R	R	R	R	R	R	R	R	R	NO	NE	NE	NO	NO	NO	NO	NO
European Union (KP)	NO, NR, R	NO, NR, R	IE, NO, NR, R	IE, NO, NR, R	NO, NR, R	NO, NR, R	IE, NO, NR, R	IE, NO, R	NO, R	NO, R	NO, R	IE, NO, R	IE, NO, R	IE, NO, R	IE, NO, R	NO, NR, R	IE, NO, NR, R	IE, NO, NR, R	IE, NO, NR, R	NO, NR, R	IE, NO, NR, R	NO, NR, R	IE, NO	NO, R	NO, R	IE, NO, R	IE, NO, R	IE, NO, R	IE, NO, R	IE, NO, R
Finland	R	R	IE	IE	R	R	R	R	R	R	R	R	R	R	R	R	R	IE	IE, R	R	R	IO	IE	R	R	R	IE	R	R	R
France (KP)																														
Germany	R	R	R	R	R	R	IE	NO	NO, R	NO, R	R	R	IE, NO	IE, NO	IE, NO	R	R	R	R	R	R	NO	NO	NO, R	NO, R	R	R	NO	NO	NO
Greece	R	R	NR	NR	NR	NO	NO	NO	NO	NO	NO	NO	R	R	R	R	R	R	R	R	NO	NO	NO	NO	NO	R	NO	NO	NO	NO
Hungary	R	R	NR	NR	NR	NO	IE	IE	NO	NO	NO	NO	IE	R	R	R	R	R	R	R	NO	IO	IE	NO	NO	R	R	IE	R	R
Iceland	R	R	R	NO	R	R	NO	R	R	R	NO	NO	NO	NO	NO	R	NO	NO	NO	R	R	NO	NO	R	R	NE	NO	NO	NO	NO
Ireland	R	R	R	R	R	R	R	IE	R	R	NO	IE	R	R	R	R	R	R	R	R	R	IO	IE	R	R	R	IE	NO	NO	NO
Italy	R	R	R	R	R	R	R	NO	NO	NO	R	R	R	R	R	R	R	R	R	R	NO	R	NO	NO	NO	NO	NO	NO	NO	NO
Japan	R	R	R	R	R	NO	NO	IE	NO	NO	NO	IE	IE	R	R	R	R	R	R	R	R	IO	IE	R	NO	R	R	NO	NO	NO
Kazakhstan	R	IE	R	R	R	NO	NR	NO	NO	NO	NO	NO	IE	IE	IE	R	IE	IE	IE	R	NO	NR	NO	NO	NO	NO	NO	NO	NO	NO
Latvia	R	R	R	R	NO	R	NO	NO	R	R	NO	NO	NO	NO	NO	R	R	R	R	R	R	R	IE	R	R	IE	IE	NO	NO	NO
Liechtenstein	R	R	NR	NR	R	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	R	R	R	R	R	NO	IO	NO	NO	NO	R	NO	NO	NO	NO
Lithuania	R	R	R	NO	R	R	IE	NO	R	R	NO	NO	R	R	R	R	R	R	R	R	R	IO	NO	NO	NO	R	NO	NO	NO	NO
Luxembourg	R	R	R	R	R	NO	IO	NO	NO	NO	NO	NO	NO	NO	NO	R	R	R	R	R	NO	IO	NO	NO	NO	R	NO	NO	NO	NO
Malta	NR	NR	NR	NR	NR	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
Monaco	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	IO	NO	NO	NO	NO	NO	NO	NO	NO
Netherlands	R	R	NR	R	R	R	IE	NO	NE	R	R	NO	R	R	R	R	R	R	R	R	R	IO	IE	NE	IE	R	IE	R	R	R
New Zealand	R	R	R	R	R	R	R	IE	NE	NE	R	IE	IE	R	R	R	R	R	R	R	R	R	IE	NE	NE	R	IE	IE	R	R
Norway	R	R	R	R	R	R	R	R	NE, R	NE, R	R	R	IE, NO	NO, R	NO, R	R	R	R	R	R	R	R	IE	NE, R	IE, NE	R	R	NO	NO	NO
Poland	R	R	R	R	R	R	NO	NO	NO	NO	NO	NO	R	R	R	R	R	R	R	R	R	R	NO	NO	NO	NO	NO	NO	NO	NO
Portugal	R	R	R	IE	R	NO	R	IE	NO	NO	R	IE	R	R	R	R	R	R	IE	R	NO	R	IE	NO	NO	R	IE	R	R	R
Romania	R	R	R	NO	NR	NR	R	IE	NO	NO	NO	NO	R	R	R	R	R	R	NO	R	NR	R	IE	NO	NO	NO	NO	R	R	R
Russian Federation	R	R	R	R	R	NO	R	NO	NO	NO	NO	NO	IE	R	R	R	R	R	R	R	NO	IE	NO	NO	NO	NO	NO	NO	NO	NO
Slovakia	R	R	R	NO, NR	R	NO, NR	NR	NO	NO	NO	NO	NO	R	R	R	R	R	R	R	R	NO, NR	NR	NO	NO	NO	NO	NO	NO	NO	NO
Slovenia	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	R	R	R	R	R	NO	IO	NO	NO	NO	R	NO	NO	NO	NO
Spain	R	IE	NR, R	NR, R	NR, R	NO	NR	NO	NO	NO	NE, R	IE, NE	IE, NO, R	NO, R	NO, R	NR, R	IE, NR	NR, R	NR, R	NR, R	NO	NR	NO	NO	NO	NE, R	IE, NE	NO, R	IE, NO, R	IE, NO, R
Sweden	R	R	R	R	R	R	R	NO	R	R	R	R	NO	NO	NO	R	R	R	R	R	R	IO	NO	R	R	R	R	NO	NO	NO
Switzerland	R	R	NR	NR	R	R	NO	NO	NO	R	R	NO	IE	IE	IE	R	R	R	R	R	R	IO	NO	NO	NO	R	NO	NO	NO	NO
Ukraine	R	R	R	R	R	NO	IE	NO	NO	NO	R	R	R	R	R	R	R	R	R	R	NO	IO	NO	NO	NO	R	R	NO	NO	NO
United Kingdom of Great Britain and Northern Ireland (KP)	R	R	R	R	R	R	R	R	NE	R	R	NE	R	R	R	R	IE	R	IE	R	IE, R	IO	NO	NO	NO	R	NO	R	R	R

[a] As reported in Table NIR 1. "Summary Table - Activity coverage and other information relating to activities under Article 3, paragraph 3, forest management under Article 3.4, and elected activities under Article 3.4.

[b] Indicate R (reported), NR (not reported), IE (included elsewhere) or NO (not occurring), for each relevant activity under Article 3.3, forest management or any elected activity under Article 3.4, or instantaneous oxidation (IO) for carbon stock changes in harvest wood products (HWP). With the exception of HWP, if changes in a carbon pool are not reported, verifiable information in the national inventory report (NIR) must be provided that demonstrates that these unaccounted pools were not a net source of anthropogenic greenhouse gas emissions. Indicate NA (not applicable) for each activity that is not elected under Article 3.4. Explanation about the use of notation keys should be provided in the NIR.

[c] Indicate R (reported), NE (not estimated), IE (included elsewhere) or NO (not occurring) for greenhouse gas sources reported, for each relevant activity under Article 3.3, forest management or any elected activity under Article 3.4. Indicate NA (not applicable) for each activity that is not elected under Article 3.4. Explanation about the use of notation keys should be provided in the NIR.

[d] Includes CO2 emissions/removals from organic soils, including CO2 emissions from dissolved organic carbon associated with drainage and rewetting. On-site CO2 emissions/removals from drainage and rewetting from organic soils and off-site CO2 emissions via water-borne carbon losses from organic soils should be reported here for wetland drainage and rewetting. These emissions could be reported for other activities as appropriate.

[e] HWP from lands reported under deforestation, which originated from the deforestation event at the time of the land-use change shall be accounted for on the basis of instantaneous oxidation (IO).

[f] N2O emissions from fertilization of each activity (afforestation/reforestation, deforestation, forest management, revegetation and wetland drainage and rewetting) should be reported here when these emissions are not reported under the agriculture sector.

[g] CH4 and N2O emissions from drained and rewetted organic soils should be reported here, as appropriate, when emissions are not reported under the agriculture sector. For wetland drainage and rewetting only emissions from organic soils are included.

[h] CH4 emissions from drained soils and drainage ditches should be reported here, as appropriate.

[i] N2O emissions from nitrogen mineralization/immobilization associated with loss/gain of soil organic matter resulting from change of land use or management of mineral soils under the appropriate activity (afforestation/reforestation, deforestation, forest management, cropland management, grazing land management and revegetation) should be reported here when these emissions are not reported under the agriculture sector.

[j] Emissions from burning of organic soils should also be included here, as appropriate.

[k] If CO2 emissions from biomass burning are not already included under changes in carbon stocks, they should be reported under biomass burning. Parties that include CO2 emissions from biomass burning in their carbon stock change estimates should report IE (included elsewhere).

Table 6.2(b)

Activity coverage in the reporting of information relating to activities under Article 3, paragraph 3, forest management under Article 3.4, and elected activities under Article 3.4 [a]

	Forest management															Cropland management											
	Change in carbon pool reported [b]							Greenhouse gas sources reported [c]								Change in carbon pool reported [b]							Greenhouse gas sources reported [c]				
	Above-ground biomass	Below-ground biomass	Litter	Deadwood	Soil		HWP [e]	Fertilization [f]	Drained, rewetted and other soils [g]		Nitrogen mineralization in mineral soils [i]	Indirect N_2O emissions from managed soil [f]	Biomass burning [j]			Above-ground biomass	Below-ground biomass	Litter	Deadwood	Soil		Drained, rewetted and other soils [g]	Nitrogen mineralization in mineral soils [i]	Biomass burning [j]		
					Mineral	Organic [d]														Mineral	Organic [d]						
								N_2O	CH_4 [h]	N_2O	N_2O	N_2O	CO_2 [k]	CH_4	N_2O							CH_4 [h]	N_2O	CO_2 [k]	CH_4	N_2O
Australia	R	R	R	R	R	IE	R	IE	NA	NA	R	IE	R	R	R	R	R	R	R	R	R	NA	R	R	R	R
Austria	R	R	IE	R	R	NO	R	NO	NO	NO	NO	NO	IE	R	R	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Belgium	R	R	NO	NO	NR	NO	R	NO	NO	NO	R	NO	NO	NO	NO	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bulgaria	R	IE	NO	R	NO	NO	R	NO	NO	NO	NO	NO	IE	R	R	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Croatia	R	R	NO	NO	NO	NO	R	NO	NO	NO	NO	NO	R	R	R	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cyprus	R	R	NO	R	R	NO	R	NO	NO	NO	NO	NO	NO	NO	NO	NR	NR	NR	NR	NR	NR	NA	NA	NA	NA	NA	NA
Czechia	R	R	IE	R	NR	R	R	NO	NO	NO	NO	NO	R	R	R	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Denmark (KP)	R	R	R	R	R	R	R	R	R	R	NO	R	NO	NO	NO	R	R	NO	NO	R	R	R	R	NO	NO	NO	NO
Estonia	R	R	R	R	R	R	R	NO	R	R	NO	NO	IE	R	R	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
European Union (KP)	NR, R	IE, NR, R	IE, NO, NR, R	IE, NO, NR, R	NO, NR, R	NO, NR, R	NR, R	IE, NO, R	NO, R	NO, R	NO, R	IE, NO, R	IE, NO, R	NO, R	NO, R	NR, R	IE, NR, R	IE, NO, NR, R	IE, NO, NR, R	NR, R	NO, R	NO, R	IE, NO, R	NO, R	IE, NO, R	IE, NO, R
Finland	R	R	IE	IE	R	R	R	R	R	R	R	R	R	R	R	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
France (KP)																											
Germany	R	R	R	R	R	R	R	NO	R	R	R	R	IE, NO	NO, R	NO, R	R	R	IE	IE	R	R	R	R	NO	NO	NO	NO
Greece	R	R	NR	NR	NR	NO	R	NO	NO	NO	NO	NO	R	R	R	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hungary	R	R	NR	NR	NR	R	R	IE	NO	NO	NO	NO	IE	R	R	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Iceland	R	R	R	NR	R	R	R	NO	R	R	NE	NE	NO	NO	NO	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ireland	R	R	R	R	R	R	R	IE	R	R	NO	IE	R	R	R	R	IE	NO	NO	R	NO	NO	IE	NO	R	R	R
Italy	R	R	R	R	NR	NR	R	NO	NO	NO	NO	NO	R	R	R	R	R	NO	NO	R	R	NO	NO	R	R	R	R
Japan	R	R	R	R	R	NO	R	R	NO	NO	R	R	IE	R	R	R	R	NR	NR	R	R	R	R	IE	R	R	R
Kazakhstan	R	IE	R	R	R	NO	NR	NO	NO	NO	NO	NO	IE	R	R	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
Latvia	R	R	R	R	NO	R	R	NO	R	R	R	R	R	R	R	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Liechtenstein	R	R	NR	NR	NR	NO	R	NO	NO	NO	NO	NO	NO	NO	NO	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Lithuania	R	R	R	R	NO	R	R	NO	R	R	NO	NO	R	R	R	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Luxembourg	R	R	R	R	R	NO	IO	NO	NO	NO	NO	NO	NO	NO	NO	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Malta	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Monaco	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
Netherlands	R	R	NR	R	R	R	R	NO	NE	R	R	NO	R	R	R	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
New Zealand	R	R	R	R	R	R	R	NO	NE	NE	R	IE	IE	R	R	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Norway	R	R	R	R	R	R	R	R	NE, R	NE, R	R	R	IE	NE, R	NE, R	NO, R	NO, R	NO	NO	R	R	NE, R	R	NO	NO	NO	NO
Poland	R	R	R	R	R	R	R	NO	NO	NO	NO	NO	R	R	R	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Portugal	R	R	R	IE	R	NO	R	IE	NO	NO	R	IE	R	R	R	R	R	R	NO	R	NO	NO	R	R	R	R	R
Romania	R	R	R	NO	R	NR	R	IE	NO	NO			R	R	R	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Russian Federation	R	R	R	R	R	R	R	NO	R	R	NO	NO	R	R	R	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Slovakia	R	R	NO, NR	NO, NR	NO, NR	NO, NR	R	NO	NO	NO	NO	NO	R	R	R	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Slovenia	R	R	NR	R	NR	NO	R	NO	NO	NO	NO	NO	R	R	R	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Spain	R	IE	NR	NR	NR	NO	R	NO	NO	NO	NE	NE	IE	R	R	R	IE	NR, R	NR	R	NO	NO	NE, R	NO, R	IE, NO, R	IE, NO, R
Sweden	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Switzerland	R	R	R	R	R	R	R	NO	NO	R	NO	NA	IE	R	R	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ukraine	R	R	NA	NA	R	R	R	NO	NO	R	NO	NO	R	R	R	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
United Kingdom of Great Britain and Northern Ireland (KP)	R	R	R	R	R	R	R	NO	NE	R	R	NO	R	R	R	R	IE	NR	NR	R	R	NE	R	NE, NO	R	R

[a] As reported in Table NIR 1. "Summary Table - Activity coverage and other information relating to activities under Article 3, paragraph 3, forest management under Article 3.4.

[b] Indicate R (reported), NR (not reported), IE (included elsewhere) or NO (not occurring), for each relevant activity under Article 3.3, forest management or any elected activity under Article 3.4, or instantaneous oxidation (IO) for carbon stock changes in harvest wood products (HWP). With the exception of HWP, if changes in a carbon pool are not reported , verifiable information in the national inventory report (NIR) must be provided that demonstrates that these unaccounted pools were not a net source of anthropogenic greenhouse gas emissions. Indicate NA (not applicable) for each activity that is not elected under Article 3.4. Explanation about the use of notation keys should be provided in the NIR.

[c] Indicate R (reported), NE (not estimated), IE (included elsewhere) or NO (not occurring) for greenhouse gas sources reported, for each relevant activity under Article 3.3, forest management or any elected activity under Article 3.4. Indicate NA (not applicable) for each activity that is not elected under Article 3.4. Explanation about the use of notation keys should be provided in the NIR.

[d] Includes CO2 emissions/removals from organic soils, including CO2 emissions from dissolved organic carbon associated with drainage and rewetting. On-site CO2 emissions/removals from drainage and rewetting from organic soils and off-site CO2 emissions via water-borne carbon losses from organic soils should be reported here for wetland drainage and rewetting. These emissions could be reported for other activities as appropriate.

[e] HWP from lands reported under deforestation, which originated from the deforestation event at the time of the land-use change shall be accounted for on the basis of instantaneous oxidation (IO).

[f] N2O emissions from fertilization of each activity (afforestation/reforestation, deforestation, forest management, revegetation and wetland drainage and rewetting) should be reported here when these emissions are not reported under the agriculture sector.

[g] CH4 and N2O emissions from drained and rewetted organic soils should be reported here, as appropriate, when emissions are not reported under the agriculture sector. For wetland drainage and rewetting only emissions from organic soils are included.

[h] CH4 emissions from drained soils and drainage ditches should be reported here, as appropriate.

[i] N2O emissions from nitrogen mineralization/immobilization associated with loss/gain of soil organic matter resulting from change of land use or management of mineral soils under the appropriate activity (afforestation/reforestation, deforestation, forest management, cropland management, grazing land management and revegetation) should be reported here when these emissions are not reported under the agriculture sector.

[j] Emissions from burning of organic soils should also be included here, as appropriate.

[k] If CO2 emissions from biomass burning are not already included under changes in carbon stocks, they should be reported under biomass burning. Parties that include CO2 emissions from biomass burning in their carbon stock change estimates should report IE (included elsewhere).

Table 6.2(c)

Activity coverage in the reporting of information relating to activities under Article 3, paragraph 3, forest management under Article 3.4, and elected activities under Article 3.4 [a]

	Grazing land management											Revegetation											
	Change in carbon pool reported[b]						Greenhouse gas sources reported[c]					Change in carbon pool reported[b]						Greenhouse gas sources reported[c]							
	Above-ground biomass	Below-ground biomass	Litter	Deadwood	Soil		Drained, rewetted and other soils[e]	Nitrogen mineralization in mineral soils[g]	Biomass burning[h]			Above-ground biomass	Below-ground biomass	Litter	Deadwood	Soil		Fertilization[j]	Drained, rewetted and other soils[e]		Nitrogen mineralization in mineral soils[g]	Indirect N_2O emissions from managed soil[j]	Biomass burning[h]		
					Mineral	Organic[d]										Mineral	Organic[d]								
							CH_4[f]	N_2O	CO_2[i]	CH_4	N_2O							N_2O	CH_4[f]	N_2O	N_2O	N_2O	CO_2[i]	CH_4	N_2O
Australia	R	R	R	R	R	R	NA	R	R	R	R	R	IE	IE	IE	IE	IE	IE	NA	NA	NA	IE	IE	IE	IE
Austria	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Belgium	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bulgaria	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Croatia	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cyprus	NR	NR	NR	NR	NR	NR	NA	NA	NA	NA	NA	NR	NR	NR	NR	NR	NR	NA	NA	NA	NA	NA	NA		
Czechia	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Denmark (KP)	R	R	NO	NO	R	R	R	R	R	R	R	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Estonia	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
European Union (KP)	NO, NR, R	IE, NO, NR, R	IE, NO, NR, R	IE, NO, NR, R	NR, R	NO, R	NO, R	IE, NO, R	IE, NO, R	NO, R	NO, R	NR, R	IE, NR, R	IE, NR, R	NO, NR, R	NR, R	NO	NO, R	NO	NO	NO, R	NO, R	NO, R	NO, R	NO, R
Finland	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
France (KP)																									
Germany	R	R	IE	IE	R	R	R	R	NO	NO	NO	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Greece												NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hungary	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Iceland	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	R	IE	IE	NO	R	NO	R	NO	NO	IE	IE	NE	R	R
Ireland	R	IE	NO	NO	R	R	R	IE	NO	R	R	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Italy	NO	NO	NO	NO	R	NO	NO	NO	NO	NO	NO														
Japan	R	R	NR	NR	R	R	R	R	NO	NO	NO	R	R	R	IE	R	NO	IE	NO	NO	NA	IE, NA	NO	NO	NO
Kazakhstan	R	IE	R	NO	R	NO	NO	NO	IE	IE	IE	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
Latvia	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Liechtenstein	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Lithuania	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Luxembourg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Malta	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Monaco	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
Netherlands	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
New Zealand	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Norway	NO, R	NO, R	NO	NO	R	R	NE, R	R	IE, NO	NE, NO	NE, NO	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Poland	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Portugal	R	R	R	NO	R	NO	NO	R	R	R	R	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Romania	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	R	R	R	R	R	NO	R	NO	NO	R	R	R	R	R
Russian Federation	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Slovakia	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Slovenia	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Spain	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sweden	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Switzerland	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ukraine	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
United Kingdom of Great Britain and Northern Ireland (KP)	R	IE	NR	NR	R	R	NE	R	NO	R	R	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

[a] As reported in Table NIR 1. "Summary Table - Activity coverage and other information relating to activities under Article 3, paragraph 3, forest management under Article 3.4, and elected activities under Article 3.4.

[b] Indicate R (reported), NR (not reported), IE (included elsewhere) or NO (not occurring), for each relevant activity under Article 3.3, forest management or any elected activity under Article 3.4, or instantaneous oxidation (IO) for carbon stock changes in harvest wood products (HWP). With the exception of HWP, if changes in a carbon pool are not reported, verifiable information in the national inventory report (NIR) must be provided that demonstrates that these unaccounted pools were not a net source of anthropogenic greenhouse gas emissions. Indicate NA (not applicable) for each activity that is not elected under Article 3.4. Explanation about the use of notation keys should be provided in the NIR.

[c] Indicate R (reported), NE (not estimated), IE (included elsewhere) or NO (not occurring) for greenhouse gas sources reported, for each relevant activity under Article 3.3, forest management or any elected activity under Article 3.4. Indicate NA (not applicable) for each activity that is not elected under Article 3.4. Explanation about the use of notation keys should be provided in the NIR.

[d] Includes CO2 emissions/removals from organic soils, including CO2 emissions from dissolved organic carbon associated with drainage and rewetting. On-site CO2 emissions/removals from drainage and rewetting from organic soils and off-site CO2 emissions via water-borne carbon losses from organic soils should be reported here for wetland drainage and rewetting. These emissions could be reported for other activities as appropriate.

[e] CH4 and N2O emissions from drained and rewetted organic soils should be reported here, as appropriate, when emissions are not reported under the agriculture sector. For wetland drainage and rewetting only emissions from organic soils are included.

[f] CH4 emissions from drained soils and drainage ditches should be reported here, as appropriate.

[g] N2O emissions from nitrogen mineralization/immobilization associated with loss/gain of soil organic matter resulting from change of land use or management of mineral soils under the appropriate activity (afforestation/reforestation, deforestation, forest management, cropland management, grazing land management and revegetation) should be reported here when these emissions are not reported under the agriculture sector.

[h] Emissions from burning of organic soils should also be included here, as appropriate.

[i] If CO2 emissions from biomass burning are not already included under changes in carbon stocks, they should be reported under biomass burning. Parties that include CO2 emissions from biomass burning in their carbon stock change estimates should report IE (included elsewhere).

[j] N2O emissions from fertilization of afforestation/reforestation, deforestation, forest management, revegetation and wetland drainage and rewetting should be reported here when these emissions are not reported under the agriculture sector.

Table 6.2(d)

Activity coverage in the reporting of information relating to activities under Article 3, paragraph 3, forest management under Article 3.4, and elected activities under Article 3.4[a]

	Wetland drainage and rewetting												
	Change in carbon pool reported[b]						Greenhouse gas sources reported[c]						
	Above-ground biomass	Below-ground biomass	Litter	Deadwood	Soil		Fertilization[e]	Drained, rewetted and other soils[f]		Indirect N_2O emissions from managed soil[e]	Biomass burning[i]		
					Mineral	Organic[d]							
							N_2O	CH_4[h]	N_2O	N_2O	CO_2[j]	CH_4	N_2O
Australia	NA	NA	NA	NA		NA	NA	NA	NA	NA	NA	NA	NA
Austria	NA	NA	NA	NA		NA	NA	NA	NA	NA	NA	NA	NA
Belgium	NA	NA	NA	NA		NA	NA	NA	NA	NA	NA	NA	NA
Bulgaria	NA	NA	NA	NA		NA	NA	NA	NA	NA	NA	NA	NA
Croatia	NA	NA	NA	NA		NA	NA	NA	NA	NA	NA	NA	NA
Cyprus	NR	NR	NR	NR		NR	NA	NA	NA	NA	NA	NA	NA
Czechia	NA	NA	NA	NA		NA	NA	NA	NA	NA	NA	NA	NA
Denmark (KP)	NA	NA	NA	NA		NA	NA	NA	NA	NA	NA	NA	NA
Estonia	NA	NA	NA	NA		NA	NA	NA	NA	NA	NA	NA	NA
European Union (KP)	NR, R	NR, R	NR, R	NR, R		NO, NR, R	NO	NO	NO	NO	NO	NO	NO
Finland	NA	NA	NA	NA		NA	NA	NA	NA	NA	NA	NA	NA
France (KP)													
Germany	NA	NA	NA	NA		NA	NA	NA	NA	NA	NA	NA	NA
Greece	NA	NA	NA	NA		NA	NA	NA	NA	NA	NA	NA	NA
Hungary	NA	NA	NA	NA		NA	NA	NA	NA	NA	NA	NA	NA
Iceland	NA	NA	NA	NA		NA	NA	NA	NA	NA	NA	NA	NA
Ireland	NA	NA	NA	NA		NA	NA	NA	NA	NA	NA	NA	NA
Italy													
Japan	NA	NA	NA	NA		NA	NA	NA	NA	NA	NA	NA	NA
Kazakhstan	NO	NO	NO	NO		NO	NO	NO	NO	NO	NO	NO	NO
Latvia	NA	NA	NA	NA		NA	NA	NA	NA	NA	NA	NA	NA
Liechtenstein	NA	NA	NA	NA		NA	NA	NA	NA	NA	NA	NA	NA
Lithuania	NA	NA	NA	NA		NA	NA	NA	NA	NA	NA	NA	NA
Luxembourg	NA	NA	NA	NA		NA	NA	NA	NA	NA	NA	NA	NA
Malta	NA	NA	NA	NA		NA	NA	NA	NA	NA	NA	NA	NA
Monaco	NO	NO	NO	NO		NO	NO	NO	NO	NO	NO	NO	NO
Netherlands	NA	NA	NA	NA		NA	NA	NA	NA	NA	NA	NA	NA
New Zealand	NA	NA	NA	NA		NA	NA	NA	NA	NA	NA	NA	NA
Norway	NA	NA	NA	NA		NA	NA	NA	NA	NA	NA	NA	NA
Poland	NA	NA	NA	NA		NA	NA	NA	NA	NA	NA	NA	NA
Portugal	NA	NA	NA	NA		NA	NA	NA	NA	NA	NA	NA	NA
Romania	NA	NA	NA	NA		NA	NA	NA	NA	NA	NA	NA	NA
Russian Federation	NA	NA	NA	NA		NA	NA	NA	NA	NA	NA	NA	NA
Slovakia	NA	NA	NA	NA		NA	NA	NA	NA	NA	NA	NA	NA
Slovenia	NA	NA	NA	NA		NA	NA	NA	NA	NA	NA	NA	NA
Spain	NA	NA	NA	NA		NA	NA	NA	NA	NA	NA	NA	NA
Sweden	NA	NA	NA	NA		NA	NA	NA	NA	NA	NA	NA	NA
Switzerland	NA	NA	NA	NA		NA	NA	NA	NA	NA	NA	NA	NA
Ukraine	NA	NA	NA	NA		NA	NA	NA	NA	NA	NA	NA	NA
United Kingdom of Great Britain and Northern Ireland (KP)	NR	NR	NR	NR		NR	NE	NE	NE	NE	NE	NE	NE

[a] As reported in Table NIR 1. "Summary Table - Activity coverage and other information relating to activities under Article 3, paragraph 3, forest management under Article 3.4, and elected activities under Article 3.4.

[b] Indicate R (reported), NR (not reported), IE (included elsewhere) or NO (not occurring), for each relevant activity under Article 3.3, forest management or any elected activity under Article 3.4, or instantaneous oxidation (IO) for carbon stock changes in harvest wood products (HWP). With the exception of HWP, if changes in a carbon pool are not reported , verifiable information in the national inventory report (NIR) must be provided that demonstrates that these unaccounted pools were not a net source of anthropogenic greenhouse gas emissions. Indicate NA (not applicable) for each activity that is not elected under Article 3.4. Explanation about the use of notation keys should be provided in the NIR.

[c] Indicate R (reported), NE (not estimated), IE (included elsewhere) or NO (not occurring) for greenhouse gas sources reported, for each relevant activity under Article 3.3, forest management or any elected activity under Article 3.4. Indicate NA (not applicable) for each activity that is not elected under Article 3.4. Explanation about the use of notation keys should be provided in the NIR.

[d] Includes CO2 emissions/removals from organic soils, including CO2 emissions from dissolved organic carbon associated with drainage and rewetting. On-site CO2 emissions/removals from drainage and rewetting from organic soils and off-site CO2 emissions via water-borne carbon losses from organic soils should be reported here for wetland drainage and rewetting. These emissions could be reported for other activities as appropriate.

[e] N2O emissions from fertilization of each activity (afforestation/reforestation, deforestation, forest management, revegetation and wetland drainage and rewetting) should be reported here when these emissions are not reported under the agriculture sector.

[f] CH4 and N2O emissions from drained and rewetted organic soils should be reported here, as appropriate, when emissions are not reported under the agriculture sector. For wetland drainage and rewetting only emissions from organic soils are included.

[g] CH4 emissions from drained soils and drainage ditches should be reported here, as appropriate.

[h] N2O emissions from nitrogen mineralization/immobilization associated with loss/gain of soil organic matter resulting from change of land use or management of mineral soils under the appropriate activity (afforestation/reforestation, deforestation, forest management, cropland management, grazing land management and revegetation) should be reported here when these emissions are not reported under the agriculture sector.

[i] Emissions from burning of organic soils should also be included here, as appropriate.

[j] If CO2 emissions from biomass burning are not already included under changes in carbon stocks, they should be reported under biomass burning. Parties that include CO2 emissions from biomass burning in their carbon stock change estimates should report IE (included elsewhere).

Table 6.3(a)

Afforestation and reforestation - area and implied carbon stock change factors from the change in carbon stocks for 2018[a]

	Area subject to the activity			Implied carbon stock change factor (t C/ha)										Area subject to natural disturbances		
	Total	Mineral Soils	Organic Soil[b]	CSC in above-ground biomass[c, d]			CSC in below-ground biomass[c, d]			Net CSC in litter[c]	Net CSC in dead wood[c]	Net CSC in soil[c]		Total	Mineral Soils	Organic Soil[b]
	(kha)			Gains	Losses	Net change	Gains	Losses	Net change			Mineral	Organic[e, f]	(kha)		
Australia	8 401	8 397	3.7	0.38	IE, NA	0.38	0.18	IE, NA	0.18	0.008	0.18	-0.010	16	NA	NA	NA
Austria	240	240	NA, NO	1.4	-0.46	0.97	0.36	-0.099	0.26	0.77	0.016	0.44	NA, NO	NA	NA	NA
Belgium	24	24	NA, NO	0.78	-0.001	0.78	0.15	0.000	0.15	NA, NO	NA, NO	0.54	NA, NO	NA	NA	NA
Bulgaria	301	301	NO	2.9	-0.23	2.7	IE, NO	IE, NO	IE, NO	0.40	NE, NO	-0.83	NO	NO	NO	NO
Croatia	64	64	NA, NO	0.86	-0.017	0.84	0.38	-0.019	0.36	0.22	0.016	-0.25	NA, NO	NA	NA	NA
Cyprus	9.4	9.4	NO	0.60	-0.013	0.59	0.17	-0.004	0.16	0.27	NO	0.011	NO			
Czechia	65	65	NO	1.8	-0.53	1.3	0.40	-0.13	0.27	0.44	0.026	0.25	NO	NO	NO	NO
Denmark (KP)	108	97	11	1.7	-0.10	1.6	0.36	IE	0.36	-1.0	0.017	0.11	-1.3			
Estonia	55	44	11	0.46	IE, NO	0.46	0.20	IE, NO	0.20	0.30	0.006	0.17	-0.34	NO	NO	NO
European Union (KP)	10 204	9 770	434	1.8	-0.58	1.2	0.42	-0.16	0.27	0.12	0.047	0.036	-0.97	NA, NO	NA, NO	NA, NO
Finland	196	117	79	1.1	-0.21	0.89	0.38	-0.067	0.31	IE, NA	IE, NA	0.090	-1.1	NA	NA	NA
France (KP)	2 308	2 308	IE, NO	1.4	-0.23	1.2	0.47	IE, NO	0.47	0.16	0.028	0.048	IE, NO	NO	NO	NO
Germany	305	282	23	7.4	-1.26	6.2	1.3	-0.44	0.90	0.47	0.22	-0.53	-2.2	NA	NA	NA
Greece	34	34	NO	1.9	-1.39	0.54	0.37	-0.27	0.098	NA, NE	NA, NE	NA, NE	NA	NO	NO	NO
Hungary	175	175	NA, NO	1.5	-0.035	1.4	0.37	0.000	0.37	NA, NE	0.078	NA, NE	NA, NO	NA	NA	NA
Iceland	47	44	3.4	0.96	IE, NA, NO	0.96	0.24	IE, NA, NO	0.24	0.14	NA, NO	0.41	-0.37	NO	NO	NO
Ireland	327	147	181	5.1	-3.3	1.8	1.8	-1.4	0.39	0.49	0.52	0.093	-0.74	NA	NA	NA
Italy	2 018	2 018	NO	2.1	-1.3	0.79	0.43	-0.27	0.16	0.014	0.009	0.12	NA, NO	NO	NO	NO
Japan	106	106	NA, NO	2.2	-0.001	2.2	0.56	-0.004	0.56	0.17	0.71	0.089	NA, NO	NA	NA	NA
Kazakhstan	566	566	NO	0.14	NE, NO	0.14	IE, NO	NE, NO	IE, NE, NO	0.066	0.004	1.8	NO	NE, NO	NE	NO
Latvia	117	115	2.7	0.44	-0.072	0.36	0.11	-0.018	0.091	0.081	0.086	NA, NO	-0.52	NA	NA	NA
Liechtenstein	0.035	0.035	NO	1.8	-0.047	1.8	0.59	-0.015	0.58	NO	NO	0.22	NO			
Lithuania	54	47	7.3	1.5	-0.024	1.5	0.35	-0.079	0.27	0.095	NA, NO	0.47	-0.74	NA	NA	NA
Luxembourg	9.0	9.0	NO	3.5	-0.036	3.5	0.70	IE, NO	0.70	0.29	0.097	0.43	NO	NO	NO	NO
Malta	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
Monaco	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
Netherlands	48	42	5.5	3.4	-0.28	3.1	0.61	-0.17	0.44	NE, NO	0.098	0.012	-1.0	NO	NO	NO
New Zealand	698	696	2.0	7.0	-2.4	4.5	1.5	-0.54	0.95	-0.088	0.64	-0.23	-0.68			
Norway	60	52	7.8	0.96	-0.19	0.78	0.28	-0.063	0.22	1.76	0.024	-0.40	-0.93	NA	NA	NA
Poland	788	734	54	0.81	NO	0.81	0.22	NO	0.22	NO	NO	0.083	-0.68	NO	NO	NO
Portugal	629	629	NO	2.1	-1.0	1.0	0.40	-0.31	0.088	0.043	IE, NO	0.19	NO	NO	NO	NO
Romania	36	36	IE, NO	1.9	IE, NO	1.9	IE, NO	IE, NO	IE, NO	0.060	IE, NO	NO	IE, NO	NO	NO	NO
Russian Federation	596	596	NO	1.7	-0.024	1.7	0.45	-0.006	0.44	0.044	0.42	0.42	NO	NO	NO	NO
Slovakia	49	49	NA, NO	1.2	NA, NO	1.2	0.28	NA, NO	0.28	0.415	NA, NO	1.2	NA, NO	NA	NA	NA
Slovenia	NO	NO	NO	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NO	NO	NO
Spain	1 263	1 263	NA, NO	0.88	IE, NA	0.88	IE, NA	IE, NA	IE, NA	0.062	0.025	0.26	NA, NO	NA	NA	NA
Sweden	351	332	19	0.70	IE, NO	0.70	0.23	IE, NO	0.23	0.226	0.033	-0.059	-2.1	NO	NO	NO
Switzerland	2.6	2.6	0.011	2.2	-1.5	0.67	0.75	-0.40	0.35	-0.024	0.026	0.67	-0.078			
Ukraine	310	310	NA, NO	0.51	-0.019	0.49	0.11	IE, NA	0.11	0.87	NA	0.76	NA, NO	NA	NA	NA
United Kingdom of Great Britain and Northern Ireland (KP)	585	546	39	1.8	-0.48	1.3	0.75	-0.30	0.45	0.070	0.14	-0.64	-0.95	NA	NA	NA

[a] As both afforestation and reforestation under Article 3.3 are subject to the same provisions specified in the annex to decision 2/CMP.7, they can be reported together.

[b] A Party should report on-site CO2 emissions from drained organic soils here. A Party may also choose to include emissions and removals from rewetted and other organic soils, including off-site CO2 emissions, here. A Party should provide detailed information on methodologies, emissions and removals from these subdivisions in the NIR.

[c] Carbon stock changes (CSC). The signs for estimates of gains in carbon stocks are positive (+) and of losses in carbon stocks are negative (-).

[d] Carbon stock gains and losses should be listed separately except in cases where, due to the methods used, it is technically impossible to separate information on gains and losses. In that case, net gains should be reported in the "Gains" column and net losses should be reported in the "Losses" column. The notation key included elsewhere (IE) should be filled in, in the other column.

[e] The value reported here is an emission and not a carbon stock change.

[f] CO_2 emissions from dissolved organic carbon from drained and CO_2 emissions/removals from rewetted organic soils may also be included here.

Table 6.3(b)

Deforestation - area and implied carbon stock change factors from the change in carbon stocks for 2018

	Area subject to the activity			Implied carbon stock change factor (t C/ha)										Area subject to natural disturbance		
	Total	Mineral Soils	Organic Soil	CSC in above-ground biomass[a, b]			CSC in below-ground biomass[a, b]			Net CSC in litter[a]	Net CSC in dead wood[a]	Net CSC in soil[a]		Total	Mineral Soils	Organic Soil
	(kha)			Gains	Losses	Net change	Gains	Losses	Net change			Mineral	Organic[c, d]	(kha)		
Australia	10 652	10 650	2.1	0.24	-0.53	-0.29	0.11	-0.25	-0.14	–0.016	-0.021	-0.19	-1.8	NO	NO	NO
Austria	79	79	NA, NO	0.21	-0.84	-0.63	0.053	-0.21	-0.15	-0.49	0.001	-0.40	NA, NO	NA	NA	NA
Belgium	25	25	NA, NO	NA, NO	-2.6	-2.6	NA, NO	-0.53	-0.53	-0.20	-0.050	-1.2	NA, NO	NA	NA	NA
Bulgaria	5.6	5.6	NO	0.73	-1.6	-0.88	IE, NO	IE, NO	IE, NO	-0.25	-0.044	-2.1	NO	NO	NO	NO
Croatia	4.7	4.7	NA, NO	0.069	-0.065	0.004	0.000	-0.016	-0.016	-0.008	-0.006	-1.6	NA, NO	NA	NA	NA
Cyprus	0.42	0.4	NO	0.15		0.15	0.043		0.043	-0.16	NO	-0.21	NO			
Czechia	19	19	NO	NA, NO	-1.5	-1.5	NA, NO	-0.32	-0.32	-0.19	-0.047	-0.17	NA, NO	NO	NO	NO
Denmark (KP)	13	13	0.64	0.35	-1.5	-1.1	0.17	-0.29	-0.12	-1.4	-0.069	-0.29	-5.1	NO	NO	NO
Estonia	26	22	4.1	IE, NA	-1.1	-1.1	IE, NA	-0.26	-0.26	-0.57	-0.057	-0.98	-1.5	NA	NA	NA
European Union (KP)	3 637	3 468	169	0.058	-1.3	-1.3	0.022	-0.25	-0.22	-0.25	-0.045	-0.96	-4.6	NA, NO	NA, NO	NA, NO
Finland	437	338	99	0.019	-0.43	-0.41	0.007	-0.13	-0.12	IE, NA	-0.006	-0.29	-4.8	NA	NA	NA
France (KP)	1 128	1 128	IE, NO	NO	-1.5	-1.5	NO	-0.42	-0.42	-0.17	-0.053	-0.66	IE, NO	NO	NO	NO
Germany	131	119	12	0.46	-2.3	-1.8	0.17	-0.31	-0.13	-0.98	-0.12	0.24	-5.9	NA	NA	NA
Greece	5.7	5.7	NO	NA, NO	-0.32	-0.32	NA, NO	-0.12	-0.12	-0.14	-0.014	-1.8	NA, NO	NO	NO	NO
Hungary	19	19	NO	IE, NO	-3.3	-3.3	IE, NO	-0.63	-0.63	-1.0	-0.31	-0.73	NO	NO	NO	NO
Iceland	0.065	0.053	0.012	IE, NA, NO	IE, NA, NO	IE, NA, NO	IE, NA, NO	IE, NA, NO	IE, NA, NO	IE, NA, NO	IE, NA, NO	-0.62	-7.9	NO	NO	NO
Ireland	21	12	8.9	0.003	-0.31	-0.31	0.016	-0.062	-0.046	-0.011	-0.013	-0.28	-0.96	NA	NA	NA
Italy	63	63	NO	NA, NO	-2.8	-2.8	NA, NO	-0.59	-0.59	-0.17	-0.087	-4.9	NA, NO	NO	NO	NO
Japan	323	322	0.54	0.040	-0.76	-0.72	0.019	-0.20	-0.18	-0.14	-0.33	0.012	-1.2	NA	NA	NA
Kazakhstan	89	89	NO	NO	-0.034	-0.034	NO	IE, NE	IE, NE, NO	IE, NE	IE, NE	NE	NO	NE, NO	NE	NO
Latvia	95	74	20	NA, NO	-0.30	-0.30	NA, NO	-0.16	-0.16	-0.37	-0.50	-0.25	-5.0	NO	NO	NO
Liechtenstein	0.22	0.22	NO	0.34	-3.0	-2.7	0.11	-0.99	-0.88	-0.65	-0.34	-0.83	NO			
Lithuania	4.6	4.0	0.63	IE	-23	-23	IE	-5.7	-5.73	-3.1	-1.4	-38	-88			
Luxembourg	5.9	5.9	NO	0.070	-0.70	-0.63	IE, NA, NO	-0.15	-0.15	-0.13	-0.043	-0.62	NA, NO	NO	NO	NO
Malta	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
Monaco	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
Netherlands	79	71	7.2	0.88	-3.7	-2.9	0.34	-0.72	-0.38	-1.1	-0.075	0.086	-2.3	NO	NO	NO
New Zealand	201	200	0.85	0.069	-2.6	-2.6	0.081	-0.57	-0.49	-0.15	-0.18	0.51	-2.5	NA	NA	NA
Norway	165	154	11	0.19	-1.3	-1.1	0.055	-0.34	-0.29	-2.1	-0.17	0.26	-7.9			
Poland	29	29	NO	NO	-1.2	-1.2	NO	-0.24	-0.24	0.000	-0.024	-0.76	NO	NO	NO	NO
Portugal	379	379	NO	0.065	-0.34	-0.28	0.034	-0.074	-0.040	-0.043	IE	-0.98	NO	NO	NO	NO
Romania	495	495	NA, NO	NA, NO	-2.2	-2.2	IE, NA	IE, NA	IE, NA	-0.29	IE, NA	-2.2	NA, NO	NA	NA	NA
Russian Federation	635	622	14	NO	-0.44	-0.44	NO	-0.12	-0.12	-0.089	-0.11	-0.60	-0.71	NO	NO	NO
Slovakia	8.9	8.9	NA, NO	NA, NO	-2.4	-2.4	NA, NO	-0.53	-0.53	-0.23	-0.14	-0.04	NA, NO	NA	NA	NA
Slovenia	27	27	NO	NA, NO	-0.93	-0.93	NA, NO	-0.11	-0.11	-0.070	-0.13	-1.1	NA	NO	NO	NO
Spain	125	125	NA, NO	IE, NA	-1.0	-1.0	IE, NA	IE, NA	IE, NA	-0.072	-0.028	-0.24	NA, NO	NA	NA	NA
Sweden	340	325	16	0.065	-0.73	-0.67	0.021	-0.25	-0.23	-0.40	0.000	-0.71	-1.6	NA	NA	NA
Switzerland	10	10	0.057	0.000	-2.1	-2.1	0.000	-0.64	-0.64	-0.48	-0.14	-0.88	-4.6			
Ukraine	50	50	NA, NO	NA	-0.004	-0.004	NA	-0.001	-0.001	-0.003	NA	-0.25	NA	NA	NA	NA
United Kingdom of Great Britain and Northern Ireland (KP)	73	72	0.96	0.001	-1.8	-1.8	IE, NA	IE, NA	IE, NA	-0.55	IE, NA	-2.1	-7.9	NA	NA	NA

[a] Carbon stock change (CSC). The signs for estimates of gains in carbon stocks are positive (+) and of losses in carbon stocks are negative (-).

[b] Carbon stock gains and losses should be listed separately except in cases where, due to the methods used, it is technically impossible to separate information on gains and losses. In that case, net gains should be reported in the "Gains" column and net losses should be reported in the "Losses" column. The notation key IE should be filled in, in the other column.

[c] The value reported here is an emission and not a carbon stock change.

[d] CO_2 emissions from dissolved organic carbon from drained and CO_2 emissions/removals from rewetted organic soils may also be included here.

Table 6.3(c)

Forest management - area and implied carbon stock change factors from the change in carbon stocks for 2018[a]

	Area subject to the activity			Implied carbon stock change factor (t C/ha)										Area subject to newly established forest(CEF-ne)			Area subject to harvested and converted forest plantations (CEF-hc)			Area subject to natural disturbances		
	Total	Mineral Soils	Organic Soil	CSC in above-ground biomass[b, c]			CSC in below-ground biomass[b, c]			Net CSC in litter[b]	Net CSC in dead wood[b]	Net CSC in soil[b]		Total	Mineral Soils	Organic Soil	Total	Mineral Soils	Organic Soil	Total	Mineral Soils	Organic Soil
	(kha)			Gains	Losses	Net change	Gains	Losses	Net change			Mineral	Organic[d, e]	(kha)			(kha)			(kha)		
Australia	10 823	10 823	IE, NA	0.45	-0.15	0.30	0.10	IE, NA	0.10	-0.08	-0.19	0.083	IE, NA	NA	NA	NA	NA	NA	NA	IE, NA	IE	NA
Austria	3 806	3 806	NA, NO	1.9	-1.7	0.25	0.45	-0.42	0.030	IE, NA, NE, NO	0.059	-0.19	NA, NO	NA	NA	NA	NA	NA	NA	NO	NO	NO
Belgium	680	680	NA, NO	0.39	NA, NO	0.39	0.066	NA, NO	0.066	NA, NO	NA, NO	NA, NO	NA, NO	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bulgaria	3 622	3 622	NO	0.47	IE, NO	0.47	IE, NO	IE, NO	IE, NO	NE, NO	-0.003	NE, NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
Croatia	2 311	2 311	NA, NO	1.4	-0.91	0.51	0.34	-0.22	0.12	NA, NE	NA, NE	NA, NE	NA, NO	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cyprus	144	144	NO	0.27	-0.026	0.24	0.074	-0.007	0.067	NO	0.003	NO	NO									
Czechia	2 609	2 590	19	2.6	-3.3	–0.66	0.57	-0.71	-0.14	IE, NO	-0.011	NE, NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
Denmark (KP)	531	505	26	0.97	IE, NA, NO	0.97	0.073	IE, NA, NO	0.073	-1.2	-0.11	NA, NO	-1.3	NA	NA	NA	NA	NA	NA	NA	NA	NA
Estonia	2 391	1 841	551	0.23	IE, NA	0.23	IE, NA	IE, NA	IE, NA	NA, NE	0.012	0.19	-0.16	NA	NA	NA	NA	NA	NA	NA	NA	NA
European Union (KP)	153 438	141 254	12 184	1.1	-0.68	0.42	0.25	-0.17	0.081	-0.017	0.023	0.091	-0.33	IE, NA, NO	IE, NA, NO	IE, NA, NO	NA, NO	NA, NO	NA, NO	IE, NA, NO	IE, NA, NO	IE, NA, NO
Finland	21 637	15 761	5 876	1.4	-1.2	0.17	0.37	-0.36	0.016	IE, NA	IE, NA	0.15	-0.19	NA	NA	NA	NA	NA	NA	NA	NA	NA
France (KP)	20 633	20 633	IE, NA	1.3	-1.0	0.35	0.39	-0.25	0.14	0.001	-0.024	IE, NA	IE, NA	NA	NA	NA	NA	NA	NA	IE	IE	IE
Germany	10 692	10 439	253	0.98	IE, NA	0.98	0.17	IE, NA	0.17	-0.013	0.094	0.41	-2.2	NA	NA	NA	NA	NA	NA	NA	NA	NA
Greece	1 248	1 248	NA, NO	0.42	-0.089	0.33	0.14	-0.025	0.12	NA, NE, NO	NA, NE, NO	NA, NE, NO	NA, NO	NA	NA	NA	NA	NA	NA	NO	NO	NO
Hungary	1 765	1 758	6.5	0.36	IE, NA	0.36	0.091	IE, NA	0.091	NA, NE	NA, NE	NA, NE	-2.6	NA	NA	NA	NA	NA	NA	NA	NA	NA
Iceland	94	93	0.45	0.22	-0.012	0.20	0.054	IE, NA, NE	0.054	0.006	IE, NA, NO	0.014	-0.37	NO	NO	NO	NO	NO	NO	NO	NO	NO
Ireland	446	176	270	2.5	-2.0	0.47	0.74	-0.69	0.048	0.22	-0.10	-0.046	-0.45	NO	NO	NO	NO	NO	NO	NA	NA	NA
Italy	7 449	7 449	NA, NO	2.1	-1.3	0.78	0.43	-0.27	0.16	0.003	0.002	NA, NE, NO	NA, NO	NA	NA	NA	NA	NA	NA	NO	NO	NO
Japan	15 946	15 903	43	0.61	-0.007	0.60	0.15	-0.002	0.15	0.003	-0.035	0.021	NA, NO	NA	NA	NA	NA	NA	NA	NA	NA	NA
Kazakhstan	10 040	10 040	NO	0.20	NE, NO	0.20	IE, NA, NO	NE, NO	NA, NE, NO	0.003	0.006	0.082	NO	IE, NO	IE	NO	IE, NO	IE	NO	NE, NO	NE	NO
Latvia	3 128	2 740	387	2.4	-2.1	0.27	0.60	-0.54	0.068	0.002	0.062	NA, NO	-0.52	NO	NO	NO	NO	NO	NO	NA	NA	NA
Liechtenstein	6.2	6.2	NO	1.7	-2.1	–0.38	0.56	-0.68	-0.12	NO	NO	NO	NO									
Lithuania	2 158	1 864	293	0.43	IE, NA, NO	0.43	0.10	IE, NA, NO	0.10	0.004	-0.018	NA, NE, NO	-1.5	IE	IE	IE	NO	NO	NO	NA	NA	NA
Luxembourg	87	87	NO	2.5	-2.3	0.15	0.54	-0.50	0.035	0	0.11	0	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
Malta	0.072	0.072	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
Monaco	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
Netherlands	306	293	13	3.1	-2.2	0.85	0.15	IE, NO	0.15	NE, NO	0.056	NO	-0.93	NO	NO	NO	NO	NO	NO	NO	NO	NO
New Zealand	9 209	9 196	13	0.90	-0.90	0.005	0.20	-0.19	0.008	-0.003	0.047	0.000	-0.11	NA	NA	NA	NA	NA	NA	NA	NA	NA
Norway	12 083	11 360	722	0.86	-0.49	0.36	0.21	-0.13	0.084	0.15	0.031	0.004	-0.24	NA	NA	NA	NA	NA	NA	NA	NA	NA
Poland	8 649	8 365	285	0.77	IE, NA, NO	0.77	0.21	IE, NA, NO	0.21	NA, NO	NA, NO	0.095	-0.68	NO	NO	NO	NO	NO	NO	NA	NA	NA
Portugal	3 739	3 739	NO	1.6	-1.3	0.32	0.32	-0.17	0.15	-0.002	IE, NO	-0.006	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
Romania	6 923	6 921	2.5	1.6	-0.76	0.80	IE, NA, NO	IE, NA, NO	IE, NA, NO	0.004	NA, NO	NA, NO	-0.68	NA	NA	NA	NA	NA	NA	NO	NO	NO
Russian Federation	643 713	641 763	1 950	0.29	-0.078	0.21	0.083	-0.041	0.042	0.004	0.020	0.007	-0.71	IE	IE	IE	NO	NO	NO	NA	NA	NA
Slovakia	1 977	1 977	NA, NO	2.0	-1.7	0.37	0.47	-0.33	0.14	NA, NE	NA, NE	NA, NE	NA, NO	NA	NA	NA	NA	NA	NA	NA	NA	NA
Slovenia	1 132	1 131	0.77	IE, NA	-0.34	-0.34	IE, NA	-0.067	-0.067	NA, NO	0.17	NA, NO	NA, NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
Spain	14 425	14 425	NA, NO	0.53	IE, NA, NO	0.53	IE, NA, NO	IE, NA, NO	IE, NA, NO	NA, NE, NO	NA, NE, NO	NA, NE, NO	NA, NO	NO	NO	NO	NO	NO	NO	NA	NA	NA
Sweden	27 878	23 881	3 997	0.25	IE, NO	0.25	0.082	IE, NO	0.082	-0.073	0.057	0.19	-0.35	NO	NO	NO	NO	NO	NO	NO	NO	NO
Switzerland	1 262	1 258	4.0	2.2	-2.0	0.22	0.64	-0.61	0.033	-0.036	0.043	0.002	-0.078									
Ukraine	9 609	9 416	193	1.7	-0.29	1.4	IE, NA	IE, NA	IE, NA	NA	NA	NA	-0.68	NA	NA	NA	NA	NA	NA	NA	NA	NA
United Kingdom of Great Britain and Northern Ireland (KP)	2 977	2 774	203	3.2	-2.7	0.45	1.6	-1.5	0.14	0.028	0.31	0.48	0.78	NA	NA	NA	NA	NA	NA	NO	NO	NO

[a] For forest management, information reported here refers to anthropogenic carbon stock change for the inventory year for all geographical locations that encompass land subject to forest management under Article 3.4. Newly established forest will reach at least the equivalent carbon stock that was contained in the harvested forest plantation at the time of harvest, and, if not, a debit would be generated under Article 3.4. Reporting is required by Parties which apply the provision to exclude emissions from natural disturbances in accordance with paragraphs 33 and 34 in the annex to decision 2/CMP.7.

[b] The signs for estimates of gains in carbon stocks are positive (+) and of losses in carbon stocks are negative (-).

[c] Carbon stock gains and losses should be listed separately except in cases where, due to the methods used, it is technically impossible to separate information on gains and losses. In that case, net gains should be reported in the "Gains" column and net losses should be reported in the "Losses" column. The notation key IE should be filled in, in the other column.

[d] The value reported here is an emission or removal and not a carbon stock change.

[e] CO_2 emissions from dissolved organic carbon from drained and CO_2 emissions/removals from rewetted organic soils may also be included here.

Table 6.3(d)

Cropland management - area and implied carbon stock change factors from the change in carbon stocks for 2018[a]

	Area subject to the activity			Implied carbon stock change factor (t C/ha)									
	Total	Mineral Soils	Organic Soil	CSC in above-ground biomass[b, c]			CSC in below-ground biomass[b, c]			Net CSC in litter[b]	Net CSC in dead wood[b]	Net CSC in soil[b]	
	(kha)			Gains	Losses	Net change	Gains	Losses	Net change			Mineral	Organic[d]
Australia	39 598	39 585	13	0.001	-0.002	-0.001	IE, NA	0.00	-0.001	0.000	0.000	0.022	-5.0
Austria	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Belgium	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bulgaria	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Croatia	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cyprus													
Czechia	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Denmark (KP)	2 858	2 727	132	0.023	-0.022	0.001	0.004	-0.010	-0.006	NO	NO	-0.086	-7.5
Estonia	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
European Union (KP)	53 226	52 624	601	0.028	-0.022	0.006	0.007	-0.013	-0.006	0.000	IE, NA, NE, NO	-0.037	-7.4
Finland	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
France (KP)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Germany	13 246	12 892	355	0.029	-0.039	-0.010	0.010	-0.023	-0.013	IE, NA	IE, NA, NO	-0.095	-7.8
Greece	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hungary	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Iceland	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ireland	782	782	NO	0.026	-0.007	0.019	IE	IE	IE	NO	NO	0.036	NO
Italy	9 000	8 979	21	0.035	-0.059	-0.024	0.024	-0.037	-0.013	NE	NE	0.23	-10
Japan	3 941	3 754	186	0.003	-0.021	-0.018	IE	-0.005	-0.005	NA	NA	-0.12	-2.4
Kazakhstan	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
Latvia	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA		
Liechtenstein													
Lithuania	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Luxembourg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Malta	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
Monaco	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
Netherlands	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
New Zealand	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Norway	941	882	60	0.004	-0.002	0.001	0.002	-0.001	0.001	NO	NO	0.014	-7.9
Poland	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Portugal	2 343	2 343	NO	0.033	-0.018	0.015	0.010	-0.013	-0.003	-0.001	IE	-0.044	NO
Romania	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Russian Federation	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Slovakia	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Slovenia	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Spain	20 180	20 180	NO	0.027	IE	0.027	IE	IE	IE	0.000	NO	0.017	NO
Sweden	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Switzerland													
Ukraine	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
United Kingdom of Great Britain and Northern Ireland (KP)	4 817	4 723	94	0.016	-0.003	0.014	IE, NE	IE, NE	IE, NE	NE	NE	-0.60	-5.0

[a] For those Parties where Cropland management has been elected, this table contains information on anthropogenic carbon stock change for the inventory year for all geographic locations that encompass land subject to cropland management under Article 3.4.

[b] The signs for estimates of gains in carbon stocks are positive (+) and of losses in carbon stocks are negative (-).

[c] Carbon stock gains and losses should be listed separately except in cases where, due to the methods used, it is technically impossible to separate information on gains and losses. In that case, net gains should be reported in the "Gains" column and net losses should be reported in the "Losses" column. The notation key IE should be filled in, in the other column.

[d] The value reported here is an emission or removal and not a carbon stock change.

Table 6.3(e)

Cropland management - area and implied carbon stock change factors from the change in carbon stocks for the base year[a]

	Area subject to the activity			Implied carbon stock change factor (t C/ha)									
	Total	Mineral Soils	Organic Soil	CSC in above-ground biomass[b, c]			CSC in below-ground biomass[b, c]			Net CSC in litter[b]	Net CSC in dead wood[b]	Net CSC in soil[b]	
	(kha)			Gains	Losses	Net change	Gains	Losses	Net change			Mineral	Organic[d]
Australia	39 609	39 596	13	0.000	IE, NA	0.000	IE, NA	IE, NA	IE, NA	IE, NA	IE, NA	-0.12	-5.0
Austria	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Belgium	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bulgaria													
Croatia	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cyprus													
Czechia	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Denmark (KP)	2 994	2 838	156	0.028	-0.027	0.001	0.007	-0.007	0.000	NO	NO	-0.045	-8.4
Estonia	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
European Union (KP)	57 869	57 259	609	0.017	-0.020	-0.002	0.007	-0.010	-0.003	0.000	IE, NA, NE, NO	-0.082	-7.7
Finland	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
France (KP)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
Germany	13 749	13 411	339	0.006	-0.017	-0.011	0.002	-0.008	-0.006	IE, NA	IE, NA, NO	-0.035	-8.0
Greece	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hungary	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Iceland	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ireland	782	782	NO	0.030	-0.028	0.003	IE	IE	IE	NO	NO	-0.014	NO
Italy	10 730	10 708	21	0.045	-0.073	-0.028	0.029	-0.040	-0.010	NE	NE	0.051	-10
Japan	4 591	4 403	188	0.000	-0.010	-0.009	0.000	-0.007	-0.007	NA	NA	-0.510	-2.4
Kazakhstan	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
Latvia	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Liechtenstein													
Lithuania	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Luxembourg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Malta	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
Monaco	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
Netherlands	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
New Zealand													
Norway	942	883	59	0.005	-0.004	0.001	0.002	-0.002	0.000	NO	NO	0.001	-7.9
Poland	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Portugal	2 974	2 974	NO	0.016	-0.004	0.012	0.003	-0.002	0.002	-0.005	IE	-0.29	NO
Romania	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Russian Federation	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Slovakia	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Slovenia	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Spain	20 999	20 999	NO	0.006	IE	0.006	IE	IE	IE	0.000	NO	-0.004	NO
Sweden	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Switzerland													
Ukraine													
United Kingdom of Great Britain and Northern Ireland (KP)	5 641	5 548	93	0.025	-0.002	0.023	IE, NE	IE, NE	IE, NE	NE	NE	-0.66	-5.0

[a] For those Parties where Cropland management has been elected, contains information on anthropogenic carbon stock change for the inventory year for all geographic locations that encompass land subject to cropland management under Article 3.4.

[b] The signs for estimates of gains in carbon stocks are positive (+) and of losses in carbon stocks are negative (-).

[c] Carbon stock gains and losses should be listed separately except in cases where, due to the methods used, it is technically impossible to separate information on gains and losses. In that case, net gains should be reported in the "Gains" column and net losses should be reported in the "Losses" column. The notation key IE should be filled in, in the other column.

[d] The value reported here is an emission or removal and not a carbon stock change.

Table 6.3(f)

Grazing land management - area and implied carbon stock change factors from the change in carbon stocks for 2018[a]

	Area subject to the activity			Implied carbon stock change factor (t C/ha)									
	Total	Mineral Soils	Organic Soil	CSC in above-ground biomass[b, c]			CSC in below-ground biomass[b, c]			Net CSC in litter[b]	Net CSC in dead wood[b]	Net CSC in soil[b]	
	(kha)			Gains	Losses	Net change	Gains	Losses	Net change			Mineral	Organic[d]
Australia	537 188	537 140	49	0.019	-0.016	0.002	IE, NA	0.000	0.000	0.000	0.002	0.000	-5.0
Austria	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Belgium	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bulgaria	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Croatia	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cyprus	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
Czechia	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Denmark (KP)	181	130	51	0.046	-0.16	-0.12	0.12	-0.20	-0.075	NO	NO	-0.024	-6.7
Estonia	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
European Union (KP)	31 145	28 355	2 789	0.018	-0.042	-0.024	0.014	-0.013	0.001	0.000	IE, NA, NE, NO	0.17	-3.3
Finland	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
France (KP)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Germany	6 950	5 952	998	0.071	-0.15	-0.081	0.057	-0.051	0.006	IE, NA	IE, NA, NO	0.37	-6.5
Greece	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hungary	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Iceland	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ireland	4 162	3 829	333	NO	0.000	0.000	IE, NO	NO	IE, NO	NO	NO	0.14	-6.8
Italy	3 943	3 943	NO	NO	NO	NO	NO	NO	NO	NE	NE	0.032	NO
Japan	610	569	42	0.002	-0.011	-0.009	0.007	-0.044	-0.037	NA	NA	0.17	-0.2
Kazakhstan	8 300	8 300	NO	0.037	NO	0.037	IE	NO	IE, NO	0.029	NO	0.14	NO
Latvia	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Liechtenstein													
Lithuania	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Luxembourg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Malta	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
Monaco	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
Netherlands	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
New Zealand	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Norway	217	214	3.4	0.23	-0.12	0.10	0.087	-0.047	0.040	NO	NO	-0.082	-2.7
Poland	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Portugal	591	591	NO	0.029	-0.038	-0.008	0.023	-0.030	-0.007	0.001	IE	0.10	NO
Romania	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Russian Federation	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Slovakia	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Slovenia	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Spain	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sweden	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Switzerland													
Ukraine	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
United Kingdom of Great Britain and Northern Ireland (KP)	15 317	13 910	1 407	0.002	-0.013	-0.011	IE, NE	IE, NE	IE, NE	NE	NE	0.14	-0.037

[a] If grazing land management has been elected, report here information on anthropogenic carbon stock change for the inventory year for all geographic locations that encompass land subject to grazing land management under Article 3.4.

[b] The signs for estimates of gains in carbon stocks are positive (+) and of losses in carbon stocks are negative (-).

[c] Carbon stock gains and losses should be listed separately except in cases where, due to the methods used, it is technically impossible to separate information on gains and losses. In that case, net gains should be reported in the "Gains" column and net losses should be reported in the "Losses" column. The notation key IE should be filled in, in the other column.

[d] The value reported here is an emission or removal and not a carbon stock change.

Table 6.3(g)

Grazing land management - area and implied carbon stock change factors from the change in carbon stocks for the base year[a]

	Area subject to the activity			Implied carbon stock change factor (t C/ha)									
	Total	Mineral Soils	Organic Soil	CSC in above-ground biomass[b, c]			CSC in below-ground biomass[b, c]			Net CSC in litter[b]	Net CSC in dead wood[b]	Net CSC in soil[b]	
	(kha)			Gains	Losses	Net change	Gains	Losses	Net change			Mineral	Organic[d]
Australia	545 469	545 420	49	0.006	-0.003	0.002	IE, NA	IE, NA	IE, NA	IE, NA	0.001	-0.005	-5.0
Austria	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Belgium	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bulgaria													
Croatia	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cyprus	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
Czechia	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Denmark (KP)	147	88	59	0.012	-0.022	-0.009	0.034	-0.049	-0.015	NO	NO	-0.001	-6.8
Estonia	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
European Union (KP)	29 896	27 073	2 823	0.012	-0.015	-0.003	0.003	-0.003	0.000	0.000	IE, NA, NE, NO	0.071	-3.2
Finland	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
France (KP)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
Germany	6 277	5 293	984	0.012	-0.030	-0.017	0.010	-0.010	0.000	IE, NA	IE, NA, NO	0.092	-6.9
Greece	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hungary	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Iceland	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ireland	4 339	3 966	373	NO	0.000	0.000	IE, NO	IE, NO	IE, NO	NO	NO	-0.013	-4.7
Italy	3 821	3 821	NO	NO	NO	NO	NO	NO	NO	NE	NE	-0.009	NO
Japan	646	605	41	0.005	IE, NO	0.005	0.018	IE, NO	0.018	NA	NA	-0.39	-0.19
Kazakhstan	185	185	NO	0.16	NO	0.16	IE	NO	IE, NO	0.25	NO	-0.108	NO
Latvia	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Liechtenstein													
Lithuania	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Luxembourg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Malta	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
Monaco	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
Netherlands	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
New Zealand													
Norway	230	226	3.6	0.24	-0.124	0.11	0.092	-0.048	0.044	NO	NO	0.032	-3.6
Poland	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Portugal	529	529	NO	0.025	-0.063	-0.039	0.044	-0.033	0.011	-0.009	IE	-0.65	NO
Romania	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Russian Federation	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Slovakia	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Slovenia	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Spain	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sweden	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Switzerland													
Ukraine													
United Kingdom of Great Britain and Northern Ireland (KP)	14 783	13 375	1 408	0.019	-0.015	0.003	IE, NE	IE, NE	IE, NE	NE	NE	0.14	-0.034

[a] If grazing land management has been elected, report here information on anthropogenic carbon stock change for the inventory year for all geographic locations that encompass land subject to grazing land management under Article 3.4.

[b] The signs for estimates of gains in carbon stocks are positive (+) and of losses in carbon stocks are negative (-).

[c] Carbon stock gains and losses should be listed separately except in cases where, due to the methods used, it is technically impossible to separate information on gains and losses. In that case, net gains should be reported in the "Gains" column and net losses should be reported in the "Losses" column. The notation key IE should be filled in, in the other column.

[d] The value reported here is an emission or removal and not a carbon stock change.

Table 6.3(h)

Revegetation - area and implied carbon stock change factors from the change in carbon stocks for 2018[a]

	Area subject to the activity			Implied carbon stock change factor (t C/ha)									
	Total	Mineral Soils	Organic Soil	CSC in above-ground biomass[b, c]			CSC in below-ground biomass[b, c]			Net CSC in litter[b]	Net CSC in dead wood[b]	Net CSC in soil[b]	
	(kha)			Gains	Losses	Net change	Gains	Losses	Net change			Mineral	Organic[d]
Australia	14 109	14 109	IE	0.020	-0.022	-0.002	IE	IE	IE	IE	IE	IE	IE
Austria	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Belgium	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bulgaria	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Croatia	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cyprus	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
Czechia	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Denmark (KP)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Estonia	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
European Union (KP)	413	413	NA, NO	0.85	IE, NA, NO	0.85	IE, NA, NO	IE, NA, NO	IE, NA, NO	0.003	NA, NO	0.45	NA, NO
Finland	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
France (KP)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Germany	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Greece	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hungary	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Iceland	307	307	NO	0.057	IE	0.057	IE	IE	IE	IE	NO	0.51	NA
Ireland	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Italy	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Japan	89	86	2.1	2.5	IE	2.5	0.64	IE	0.64	0.044	IE	0.94	NO
Kazakhstan	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
Latvia	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Liechtenstein													
Lithuania	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Luxembourg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Malta	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
Monaco	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
Netherlands	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
New Zealand	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Norway	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Poland	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Portugal	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Romania	106	106	NO	3.2	IE	3.2	IE	IE	IE	0.011	NO	0.25	NO
Russian Federation	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Slovakia	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Slovenia	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Spain	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sweden	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Switzerland													
Ukraine	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
United Kingdom of Great Britain and Northern Ireland (KP)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

[a] For those Parties where revegetation has been elected, contains information on anthropogenic carbon stock change for the inventory year for all geographic locations that encompass land subject to Revegetation under Article 3.4.

[b] The signs for estimates of gains in carbon stocks are positive (+) and of losses in carbon stocks are negative (-).

[c] Carbon stock gains and losses should be listed separately except in cases where, due to the methods used, it is technically impossible to separate information on gains and losses. In that case, net gains should be reported in the "Gains" column and net losses should be reported in the "Losses" column. The notation key IE should be filled in, in the other column.

[d] The value reported here is an emission or removal and not a carbon stock change.

Table 6.3(i)

Revegetation - area and implied carbon stock change factors from the change in carbon stocks for the base year[a]

	Area subject to the activity			Implied carbon stock change factor (t C/ha)									
	Total	Mineral Soils	Organic Soil	CSC in above-ground biomass[b, c]			CSC in below-ground biomass[b, c]			Net CSC in litter[b]	Net CSC in dead wood[b]	Net CSC in soil[b]	
	(kha)			Gains	Losses	Net change	Gains	Losses	Net change			Mineral	Organic[d]
Australia	14 201	14 201	IE	0.004	-0.010	-0.006	IE	IE	IE	IE	IE	IE	IE
Austria	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Belgium	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bulgaria													
Croatia	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cyprus	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
Czechia	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Denmark (KP)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Estonia	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
European Union (KP)	259	259	NA, NO	1.1	IE, NA, NO	1.1	IE, NA, NO	IE, NA, NO	IE, NA, NO	0.026	NA, NO	1.1	NA, NO
Finland	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
France (KP)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
Germany	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Greece	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hungary	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Iceland	167	167	NO	0.057	IE, NA	0.057	IE, NA	IE, NA	IE, NA	IE, NA	NA, NO	0.51	NA
Ireland	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Italy	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Japan	6.2	6.0	0.15	2.2	IE	2.2	0.57	IE	0.57	0.041	IE	0.84	NO
Kazakhstan	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
Latvia	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Liechtenstein													
Lithuania	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Luxembourg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Malta	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
Monaco	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
Netherlands	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
New Zealand													
Norway	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Poland	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Portugal	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Romania	88	88	NO	3.0	IE	3.0	IE	IE	IE	0.073	NO	2.2	NO
Russian Federation	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Slovakia	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Slovenia	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Spain	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sweden	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Switzerland													
Ukraine													
United Kingdom of Great Britain and Northern Ireland (KP)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

[a] For those Parties where revegetation has been elected, contains information on anthropogenic carbon stock change for the inventory year for all geographic locations that encompass land subject to Revegetation under Article 3.4.

[b] The signs for estimates of gains in carbon stocks are positive (+) and of losses in carbon stocks are negative (-).

[c] Carbon stock gains and losses should be listed separately except in cases where, due to the methods used, it is technically impossible to separate information on gains and losses. In that case, net gains should be reported in the "Gains" column and net losses should be reported in the "Losses" column. The notation key IE should be filled in, in the other column.

[d] The value reported here is an emission or removal and not a carbon stock change.

Table 6.3(j)

Wetland drainage and rewetting - area and implied carbon stock change factors from the change in carbon stocks for 2018[a]

	Area subject to the activity			Implied carbon stock change factor (t C/ha)									
	Total	Mineral Soils	Organic Soil	CSC in above-ground biomass[b, c]			CSC in below-ground biomass[b, c]			Net CSC in litter[b]	Net CSC in dead wood[b]	Net CSC in soil[b]	
	(kha)			Gains	Losses	Net change	Gains	Losses	Net change			Mineral	Organic[d]
Australia	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Austria	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Belgium	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bulgaria	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Croatia	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cyprus													
Czechia	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Denmark (KP)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Estonia	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
European Union (KP)	NA, NE, NO	NA, NE, NO	NA, NE, NO	NA, NE, NO	NA, NE, NO	NA, NE, NO	NA, NE, NO	NA, NE, NO	NA, NE, NO	NA, NE, NO	NA, NE, NO	NA, NE, NO	NA, NE, NO
Finland	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
France (KP)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NO	NA
Germany	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Greece	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hungary	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Iceland	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ireland	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Italy	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Japan	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Kazakhstan	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
Latvia	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Liechtenstein													
Lithuania	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Luxembourg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Malta	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
Monaco	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
Netherlands	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
New Zealand	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Norway	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Poland	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Portugal	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Romania	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Russian Federation	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Slovakia	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Slovenia	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Spain	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sweden	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Switzerland													
Ukraine	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
United Kingdom of Great Britain and Northern Ireland (KP)	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE

[a] For those Parties where revegetation has been elected, contains information on anthropogenic carbon stock change for the inventory year for all geographic locations that encompass land subject to Revegetation under Article 3.4.

[b] The signs for estimates of gains in carbon stocks are positive (+) and of losses in carbon stocks are negative (-).

[c] Carbon stock gains and losses should be listed separately except in cases where, due to the methods used, it is technically impossible to separate information on gains and losses. In that case, net gains should be reported in the "Gains" column and net losses should be reported in the "Losses" column. The notation key IE should be filled in, in the other column.

[d] The value reported here is an emission or removal and not a carbon stock change.

Table 6.3(k)

Wetland drainage and rewetting - area and implied carbon stock change factors from the change in carbon stocks for the base year[a]

	Area subject to the activity			Implied carbon stock change factor (t C/ha)									
	Total	Mineral Soils	Organic Soil	CSC in above-ground biomass[b, c]			CSC in below-ground biomass[b, c]			Net CSC in litter[b]	Net CSC in dead wood[b]	Net CSC in soil[b]	
	(kha)			Gains	Losses	Net change	Gains	Losses	Net change			Mineral	Organic[d]
Australia	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Austria	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Belgium	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bulgaria													
Croatia	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cyprus	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
Czechia	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Denmark (KP)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Estonia	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
European Union (KP)	NA, NE, NO	NA, NE, NO	NA, NE, NO	NA, NE, NO	NA, NE, NO	NA, NE, NO	NA, NE, NO	NA, NE, NO	NA, NE, NO	NA, NE, NO	NA, NE, NO	NA, NE, NO	NA, NE, NO
Finland													
France (KP)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
Germany	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Greece	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hungary	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Iceland	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ireland	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Italy	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Japan	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Kazakhstan	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
Latvia	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Liechtenstein													
Lithuania	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Luxembourg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Malta	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
Monaco	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
Netherlands	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
New Zealand													
Norway	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Poland	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Portugal	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Romania	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Russian Federation	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Slovakia	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Slovenia	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Spain	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sweden	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Switzerland													
Ukraine													
United Kingdom of Great Britain and Northern Ireland (KP)	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE

[a] For those Parties where revegetation has been elected, contains information on anthropogenic carbon stock change for the inventory year for all geographic locations that encompass land subject to Revegetation under Article 3.4.

[b] The signs for estimates of gains in carbon stocks are positive (+) and of losses in carbon stocks are negative (-).

[c] Carbon stock gains and losses should be listed separately except in cases where, due to the methods used, it is technically impossible to separate information on gains and losses. In that case, net gains should be reported in the "Gains" column and net losses should be reported in the "Losses" column. The notation key IE should be filled in, in the other column.

[d] The value reported here is an emission or removal and not a carbon stock change.

Table 6.4

Direct and indirect N_2O emissions from N fertilization for 2018[a, b]

	Afforestation and Reforestation	Deforestation[c]	Forest management	Revegetation	Wetland drainage and rewetting[d]
	N_2O-N per unit of fertilizer	N_2O-N per unit of fertilizer	N_2O-N per unit of fertilizer	N_2O-N per unit of fertilizer	N_2O-N per unit of fertilizer
	kg N_2O-N/kg N	kg N_2O-N/kg N	kg N_2O-N/kg N	kg N_2O-N/kg N	kg N_2O-N/kg N
Australia	IE	IE	IE	IE	NA
Austria	NO	NO	NO	NA	NA
Belgium	NO	NO	NO	NA	NA
Bulgaria	NO	NO	NO	NA	NA
Croatia	NO	NO	NO	NA	NA
Cyprus					
Czechia	NO	NO	NO	NA	NA
Denmark (KP)	IE	IE	IE	NA	NA
Estonia	NO	NO	NO	NA	NA
European Union (KP)	0.013	IE, NO	0.000	0.010	IE, NA, NE, NO
Finland	NA	IE	0.010	NA	NA
France (KP)	NO	NO	NE	NA	NA
Germany	NO	NO	NO	NA	NA
Greece	NA	NA	NA	NA	NA
Hungary	IE	IE	IE	NA	NA
Iceland	0.012	NA	NA	0.010	NA
Ireland	IE	IE	IE	NA	NA
Italy	NO	NO	NO	NA	NA
Japan	IE	IE	0.000	IE	NA
Kazakhstan	NO	NO	NO	NO	NO
Latvia	NO	IE	NO	NA	NA
Liechtenstein					
Lithuania	NO	NO	NO	NA	NA
Luxembourg	NO	NO	NO	NA	NA
Malta	NO	NO	NO	NO	NO
Monaco	NO	NO	NO	NO	NO
Netherlands	NO	IE	NO	NA	NA
New Zealand	IE	IE	IE	NA	NA
Norway	0.000	IE	0.000	NA	NA
Poland	NO	NO	NO	NA	NA
Portugal	IE	IE	IE	NA	NA
Romania	IE	IE	IE	IE	IE
Russian Federation	NO	NO	NO	NA	NA
Slovakia	NO	NO	NO	NA	NA
Slovenia	NO	NA	NA	NA	NA
Spain	NO	NO	NO	NA	NA
Sweden	NO	IE	0.000	NA	NA
Switzerland	NO	NA	NO	NA	NA
Ukraine	NA	NA	NA	NA	NA
United Kingdom of Great Britain and Northern Ireland (KP)	0.013	NO	NO	NA	NE

[a] N_2O emissions from fertilization for cropland management, grazing land management and revegetation as well as from fertilization of areas categorized as cropland or grassland underdeforestation should be reported in the agriculture sector. If a Party is not able to separate fertilizer applied to forest land from agriculture, it may report all N_2O emissions from fertilization in the agriculture sector. In this case, reporting of N_2O emissions from fertilization should not be included under afforestation/reforestation, deforestation or forest management, revegetation or wetland drainage and rewetting, as appropriate, to avoid double counting.

[b] Direct and indirect N_2O emissions from fertilization are estimated following section 11.2 of the 2006 IPCC Guidelines based on the amount of fertilizer applied to land under forest management. The indirect N_2O emissions from afforestation and reforestation and land under forest management are estimated as part of the total indirect emissions in the agriculture sector based on the total amount of fertilizer used in the country. Parties should show that double counting of N_2O emissions from fertilization with agriculture sector estimates has been avoided.

[c] Only for areas that have been subsequently reforested.

[d] Only N_2O emissions which have not been reported under agriculture should be included here.

Table 6.5

CH_4 and N_2O emissions from drained and rewetted organic soils for 2018[a, b, c]

	Afforestation and Reforestation			Deforestation			Forest Management			Cropland Management			Grazing Land Management			Revegetation			Wetland drainage and rewetting		
	Area of organic soils	Implied Emission Factor		Area of organic soils	Implied Emission Factor		Area of organic soils	Implied Emission Factor		Area of organic soils	Implied Emission Factor		Area of organic soils	Implied Emission Factor		Area of organic soils	Implied Emission Factor		Area of organic soils	Implied Emission Factor	
		N_2O-N	CH_4		N_2O-N	CH_4		N_2O-N	CH_4		N_2O-N	CH_4		N_2O-N	CH_4		N_2O-N	CH_4		N_2O-N	CH_4
	kha	kg N_2O-N/ha	kg CH_4/ha	kha	kg N_2O-N/ha	kg CH_4/ha	kha	kg N_2O-N/ha	kg CH_4/ha	kha	kg N_2O-N/ha	kg CH_4/ha	kha	kg N_2O-N/ha	kg CH_4/ha	kha	kg N_2O-N/ha	kg CH_4/ha	kha	kg N_2O-N/ha	kg CH_4/ha
Australia	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA	NA		NA	NA	NA	NA	NA	NA	NA
Austria	NO	NO	NO	NO	NO	NO	NO	NO	NO	NA		NA	NA		NA	NA	NA	NA	NA	NA	NA
Belgium	NO	NO	NO	NO	NO	NO	NO	NO	NO	NA		NA	NA		NA	NA	NA	NA	NA	NA	NA
Bulgaria	NO	NO	NO	NO	NO	NO	NO	NO	NO	NA		NA	NA		NA	NA	NA	NA	NA	NA	NA
Croatia	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA	NA		NA	NA	NA	NA	NA	NA	NA
Cyprus	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO		NO	NO		NO	NO	NO	NO			
Czechia	NO	NO	NO	NO	NO	NO	NO	NO	NO	NA		NA	NA		NA	NA	NA	NA	NA	NA	NA
Denmark (KP)	11	1.4	4.0	0.64	2.6	25	26	1.4	44	144		37	54		60	NA	NA	NA	NA	NA	NA
Estonia	NA	NA	NA	NA	NA	NA	269.59	2.04	9.3	NA		NA	NA		NA	NA	NA	NA	NA	NA	NA
European Union (KP)	351	1.2	5.0	96	3.1	22	6 763	1.2	8.4	498		29	1 384		24	NA, NO	NA, NO	NA, NO	NA, NE, NO	NA, NE, NO	NA, NE, NO
Finland	71	1.4	2.0	45	1.4	19	4 237	0.91	6.4	NA		NA	NA		NA	NA	NA	NA	NA	NA	NA
France (KP)	NE, NO	NE, NO	NE, NO	NE, NO	NE, NO	NE, NO	NE, NO	NE, NO	NE, NO	NA		NA	NA		NA	NA	NA	NA	NA	NA	NA
Germany	23	1.4	4.7	12	1.6	18	253	1.4	4.6	355		25	998		20	NA	NA	NA	NA	NA	NA
Greece	NO	NA	NA	NO	NA	NA	NO	NA	NA	NA		NA	NA		NA	NA	NA	NA	NA	NA	NA
Hungary	NO	NO	NO	NO	NO	NO	NO	NO	NO	NA		NA	NA		NA	NA	NA	NA	NA	NA	NA
Iceland	3.4	0.44	7.4	0.01	0.44	7.4	0.45	0.44	7.4	NA		NA	NA		NA	NO	NA	NA	NA	NA	NA
Ireland	167	1.2	6.3	8.9	1.5	55	270	0.66	6.5	NO		NO	333		30	NA	NA	NA	NA	NA	NA
Italy	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO		NO	NO		NO	NA	NA	NA	NA	NA	NA
Japan	NO	NO	NO	NO	NA, NO	NO	NO	NO	NO	24		59	40 540		0.004	NO	NO	NO	NA	NA	NA
Kazakhstan	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO		NO	NO		NO	NO	NO	NO	NO	NO	NO
Latvia	2.7	2.8	67	15	13	36	423	2.6	33	NA		NA	NA		NA	NA	NA	NA	NA	NA	NA
Liechtenstein	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO		NO	NO		NO	NO	NO	NO	NO	NO	NO
Lithuania	3.7	1.8	7.9	NO	NO	NO	149	1.8	7.9	NA		NA	NA		NA	NA	NA	NA	NA	NA	NA
Luxembourg	NO	NO	NO	NO	NO	NO	NO	NO	NO	NA		NA	NA		NA	NA	NA	NA	NA	NA	NA
Malta	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO		NO	NO		NO	NO	NO	NO	NO	NO	NO
Monaco	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO		NO	NO		NO	NO	NO	NO	NO	NO	NO
Netherlands	1.4	0.50	NE	NE	IE, NE	NE	3.1	0.50	NE	NA		NA	NA		NA	NA	NA	NA	NA	NA	NA
New Zealand	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE		NE	NE		NE	NE	NE	NE	NE	NE	NE
Norway	7.8	3.2	7.4	11	IE, NE	58	241	2.3	8.9	60		58	2.5		63	NA	NA	NA	NA	NA	NA
Poland	NO	NO	NO	NO	NO	NO	NO	NO	NO	NA		NA	NA		NA	NA	NA	NA	NA	NA	NA
Portugal	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO		NO	NO		NO	NA	NA	NA	NA	NA	NA
Romania	NO	NO	NO	NO	NO	NO	NO	NO	NO	NA		NA	NA		NA	NO	NO	NO	NA	NA	NA
Russian Federation	NO	NO	NO	14	2.5	9.8	1 950	1.7	9.8	NA		NA	NA		NA	NA	NA	NA	NA	NA	NA
Slovakia	NO	NO	NO	NO	NO	NO	NO	NO	NO	NA		NA	NA		NA	NA	NA	NA	NA	NA	NA
Slovenia	NO	NA	NA	NO	NA	NA	NO	NA	NA	NA		NA	NA		NA	NA	NA	NA	NA	NA	NA
Spain	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO		NO	NA		NA	NA	NA	NA	NA	NA	NA
Sweden	19	2.3	9.0	15	IE, NO	3.4	941	2.2	9.0	NA		NA	NA		NA	NA	NA	NA	NA	NA	NA
Switzerland	0.000	2.8	NE, NO	NO	NO	NO	0.12	2.8	NE	NA		NA	NA		NA	NA	NA	NA	NA	NA	NA
Ukraine	NO	NO	NO	NA	NA	NA	193	0.60	NA	NA		NA	NA		NA	NA	NA	NA	NA	NA	NA
United Kingdom of Great Britain and Northern Ireland (KP)	50	0.18	NE, NO	NO	NO	NO	190	0.21	NE, NO	NE		NE	NE		NE	NA	NA	NA	NE	NE	NE

[a] Methodologies for CH_4 and N_2O emissions from drained and rewetted soils are given in the "Wetlands Supplement" for all land-use categories.

[b] N_2O emissions from drained cropland and grazing land soils are covered in the agriculture sector under cultivation of histosols.

[c] For activities other than wetland drainage and rewetting, a Party may choose to include CH4 emissions from drained, rewetted and other organic soils. A Party should provide detailed information on methodologies, emissions and removals from these subdivisions in the NIR, ensuring consistency in reporting among categories.

Table 6.6

N_2O emissions from N mineralization/immobilization due to carbon loss/gain associated with land-use conversions and management change in mineral soils for 2018[a]

	Afforestation and Reforestation			Deforestation[c]			Forest Management			Cropland Management			Grazing land Management			Revegetation		
	Land area[b]	Carbon Stock Change	IEF N_2O-N[d]	Land area[b]	Carbon Stock Change	IEF N_2O-N[d]	Land area[b]	Carbon Stock Change	IEF N_2O-N[d]	Land area[b]	Carbon Stock Change	IEF N_2O-N[d]	Land area[b]	Carbon Stock Change	IEF N_2O-N[d]	Land area[b]	Carbon Stock Change	IEF N_2O-N[d]
	kha	kt C	kg N_2O-N/ha	kha	kt C	kg N_2O-N/ha	kha	kt C	kg N_2O-N/ha	kha	kt C	kg N_2O-N/ha	kha	kt C	kg N_2O-N/ha	kha	kt C	kg N_2O-N/ha
Australia	8 397	–75	0.031	10 650	-2002	0.026	10 823	902	0.004	1 739	-94	0.006	537 140	-162	0.001	NA	NA	NA
Austria	125	-65	0.48	33	-54	0.95	NO	NO	NO	NA	NA	NA	NA	NA	NA	NA	NA	NA
Belgium	19	-0.11	0.003	25	-34	0.89	NO	NO	NO	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bulgaria	191	-250.98	1.2	5.6	-11.74	1.4	NO	NO	NO	NA	NA	NA	NA	NA	NA	NA	NA	NA
Croatia	62	-16	NO	4.5	-7	1.4	NO	NO	NO	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cyprus													NO	NO	NO			
Czechia	NO	NO	NO	3.2	-0.55	0.12	NO	NO	NO	NA	NA	NA	NA	NA	NA	NA	NA	NA
Denmark (KP)	NO	NO	NO	4.7	-4.57	1.5	506	NO	NO	2 727	-17	0.006	130	-3.1	0.020	NA	NA	NA
Estonia	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
European Union (KP)	3 153	-485	0.27	2 234	-517	0.88	48 995	8 686	0.002	18 169	-3465	0.18	6 464	1 082	0.11	NA, NO	NA, NO	NA, NO
Finland	118	2.0	0.011	338	97	0.16	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
France (KP)	NO	NO	NO	937	NA	0.53	NO	NO	NO	NA	NA	NA	NA	NA	NA	NA	NA	NA
Germany	282	-149	0.25	119	28	0.11	10 439	4 280	NO	12 892	-1219	0.10	5 952	2 175	0.000	NA	NA	NA
Greece	NO	NA	NA	5.6	-10	1.2	NO	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hungary	179	27	0.004	19	-14	0.48	1 765	NE	NO	NA	NA	NA	NA	NA	NA	NA	NA	NA
Iceland	NO	NA	NA	NE	NE	NA	NO	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ireland	147	NO	NO	8.3	-6.0	48	176	NO	NO	IE	IE	IE	IE	IE	IE	NA	NA	NA
Italy	NO	NO	NO	3.7	306	55	NO	NO	NO	NO	199	NO	NO	NO	NO	NA	NA	NA
Japan	NA	NA	NA	322	-1	0.002	15 903	-199	0.014	31	NA	0.38	544	NA	0.009	NA	NA	NA
Kazakhstan	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
Latvia	NO	NO	NO	55	-18.9	0.28	NO	NO	NO	NA	NA	NA	NA	NA	NA	NA	NA	NA
Liechtenstein				0.22		0.55												
Lithuania	47	22	NO	4.0	-150.8	25	NO	NO	NO	NA	NA	NA	NA	NA	NA	NA	NA	NA
Luxembourg	NO	NO	NO	5.9	-3.7	0.63	NO	NO	NO	NA	NA	NA	NA	NA	NA	NA	NA	NA
Malta	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
Monaco	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
Netherlands	42	0.50	0.17	71	6.11	0.17	NO	NO	NO	NA	NA	NA	NA	NA	NA	NA	NA	NA
New Zealand	701	164	0.16	204	4.7	0.02	9 203	7.0	0	NA	NA	NA	NA	NA	NA	NA	NA	NA
Norway	28	NA	0.72	101	NA	0.26	11 360	43	NO	23	-2.3	0.067	212	-20	0.062	NA	NA	NA
Poland	788	NE	NE	0.50	IE	133	8 650	NE	NE	NA	NA	NA	NA	NA	NA	NA	NA	NA
Portugal	16	-34	1.4	98	-381	2.6	19	-39	1.4	91	-252	1.9	52	-135	1.7	NA	NA	NA
Romania	NO	NO	NO	NO	NO	NO	NO	NO	NO	NA	NA	NA	NA	NA	NA	NO	NO	NO
Russian Federation	NO	NO	NO	635	375.34	0.49	NO	NO	NO	NA	NA	NA	NA	NA	NA	NA	NA	NA
Slovakia	NO	NO	NO	NO	NO	NO	NO	NO	NO	NA	NA	NA	NA	NA	NA	NA	NA	NA
Slovenia	NO	NA	NA	17.8	-26.5	1.2	NO	NO	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Spain	101	-2.8	0.29	77	-2	0.30	NE	NE	NE	381	-15	0.40	NA	NA	NA	NA	NA	NA
Sweden	332	-20	0.036	325	-230	0.26	23 881	4 445	NO	NA	NA	NA	NA	NA	NA	NA	NA	NA
Switzerland	1.1	0.011	0.007	7.4	9.2	0.83	NO	NO	NO	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ukraine	310	236	NA	50	-12.40	0.17	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
United Kingdom of Great Britain and Northern Ireland (KP)	704	IE, NO	0.42	72	IE	1.7	3 560	IE, NO	0.018	2 079	-2161	0.69	330	-955	1.9	NA	NA	NA

[a] N_2O emissions from nitrogen mineralization/immobilization associated with loss/gain of soil organic matter resulting from change of land use or management of mineral soils under afforestation/reforestation, deforestation, forest management, cropland management, grazing land management and revegetation should be reported here when these emissions/removals are not reported under the agriculture sector.

[b] Land areas should include lands converted and/or lands where a management change has taken place and resulted in carbon loss. Gains could be reported, under tier 3 approaches, if sufficient scientific justification is provided.

[c] N_2O emissions associated with deforestation followed by the establishment of cropland should be reported under deforestation even if cropland management is not elected under Article 3.4.

[d] In the calculation of the implied emission factor, N2O emissions are converted to N2O-N by multiplying by 28/44.

Table 6.7(a)

Emissions from biomass burning 2018[a]

	Afforestation/reforestation				Deforestation				Total article 3.3				Forest management			
	Activity data	Implied Emission Factor			Activity data	Implied Emission Factor			Activity data	Implied Emission Factor			Activity data	Implied Emission Factor		
	Description of unit area[b]: ab or bb[c]	CO_2	CH_4	N_2O	Description of unit area[b]: ab or bb[c]	CO_2	CH_4	N_2O	Description of unit area[b]: ab or bb[c]	CO_2	CH_4	N_2O	Description of unit area[b]: ab or bb[c]	CO_2	CH_4	N_2O
		(t/activity data unit)				(t/activity data unit)				(t/activity data unit)				(t/activity data unit)		
Australia		0.21	0.031	0.000		IE	0.10	0.002		0.036	0.091	0.002		IE	0.57	0.006
Austria		NO	NO	NO		NO	NO	NO		NO	NO	NO				
Belgium		NO	NO	NO		NO	NO	NO		NO	NO	NO		NO	NO	NO
Bulgaria		IE, NO	0.000	0.000		NO	NO	NO		IE, NO	0.000	0.000		IE, NO	0.000	0.000
Croatia						NO	NO	NO		NO	NO	NO				
Cyprus														NA	NA	NA
Czechia		NO	NO	NO		NO	NO	NO		NO	NO	NO		0.000	0.000	0.000
Denmark (KP)		NO	NO	NO		NO	NO	NO		NO	NO	NO		NO	NO	NO
Estonia		IE, NA	0.16	0.002		NO	NO	NO		IE, NA, NO	0.16	0.002		IE, NO	0.33	0.003
European Union (KP)																
Finland		NA	NA	NA		NA	IE, NA	IE, NA		NA	IE, NA	IE, NA		6.8	0.025	0.001
France (KP)																
Germany		IE, NO	IE, NO	IE, NO		NO	NO	NO		IE, NO	IE, NO	IE, NO		IE, NO	0.19	0.011
Greece		19	0.24	0.002		NA	NA	NA		19	0.24	0.002		19	0.24	0.002
Hungary		IE	0.000	0.000						IE	0.000	0.000		IE	0.000	0.000
Iceland		NA	NA	NA		NA	NA	NA		NA	NA	NA		NA	NA	NA
Ireland		152	0.66	0.004		NO	NO	NO		152	0.66	0.004		261	1.1	0.007
Italy		IE, NO	0.58	0.018		NO	NO	NO		IE, NO	0.58	0.018		IE, NO	0.58	0.018
Japan		IE, NO	0.000	0.000		NO	NO	NO		IE, NO	0.000	0.000		IE, NO	0.000	0.000
Kazakhstan		IE, NO	IE, NO	IE, NO						IE, NO	IE, NO	IE, NO		IE, NO	0.060	0.003
Latvia		NO	NO	NO		NO	NO	NO		NO	NO	NO				
Liechtenstein																
Lithuania		NO	NO	NO		NO	NO	NO		NO	NO	NO		12	0.064	0.004
Luxembourg		NO	NO	NO		NO	NO	NO		NO	NO	NO		NO	NO	NO
Malta		NO	NO	NO		NO	NO	NO		NO	NO	NO		NO	NO	NO
Monaco		NO	NO	NO		NO	NO	NO		NO	NO	NO		NO	NO	NO
Netherlands		95	0.29	0.016		7.3	0.010	0.001		15	0.035	0.002		95	0.29	0.016
New Zealand		IE	0.000	0.000		IE	0.000	0.000		IE	0.000	0.000		IE	0.000	0.000
Norway		IE, NO	0.028	0.002		NO	NO	NO		IE, NO	0.028	0.002		IE	0.028	0.002
Poland		IE, NO	0.18	0.010		NO	NO	NO		IE, NO	0.18	0.010		IE, NO	0.18	0.010
Portugal																
Romania		NO	NO	NO		NO	NO	NO		NO	NO	NO		14	0.063	0.001
Russian Federation						NO	NO	NO		NO	NO	NO		16	0.12	0.006
Slovakia		IE, NO	0.12	0.007		NO	NO	NO		IE, NO	0.12	0.007				
Slovenia		NA	NA	NA						NA	NA	NA				
Spain		17	0.065	0.005		11	0.025	0.002		17	0.065	0.005		IE	0.065	0.005
Sweden		NO	NO	NO		NO	NO	NO		NO	NO	NO		IE	0.088	0.001
Switzerland		IE	IE	IE						IE	IE	IE		IE	NA	NA
Ukraine		0.002	0.000	0.000		NA, NO	NA, NO	NA, NO		0.002	0.000	0.000		0.002	0.000	0.000
United Kingdom of Great Britain and Northern Ireland (KP)		0.001	0.000	0.000		0.002	0.000	0.000		0.002	0.000	0.000		0.001	0.000	0.000

[a] Total for controlled burning and wildfires.

[b] For each activity, activity data could area burned or fuel burned. Units will be ha for area burned, and kg dm for fuel burned. The implied emission factor will refer to the selected activity data with an automatic change in the units.

[c] Area burned (ab) and biomass burned (bb).

Table 6.7(b)

Emissions from biomass burning on cropland management land[a]

	Base year				2018			
	Activity data	Implied Emission Factor			Activity data	Implied Emission Factor		
	Description of unit area[b]: ab or bb[c]	CO_2	CH_4	N_2O	Description of unit area[b]: ab or bb[c]	CO_2	CH_4	N_2O
		(t/activity data unit)				(t/activity data unit)		
Australia		IE	IE	IE		IE, NO	IE, NO	IE, NO
Austria		NA	NA	NA		NA	NA	NA
Belgium		NA	NA	NA		NA	NA	NA
Bulgaria						NA	NA	NA
Croatia		NA	NA	NA		NA	NA	NA
Cyprus		NO	NO	NO		NO	NO	NO
Czechia		NA	NA	NA		NA	NA	NA
Denmark (KP)		NO	NO	NO		NO	NO	NO
Estonia		NA	NA	NA		NA	NA	NA
European Union (KP)								
Finland		NA	NA	NA		NA	NA	NA
France (KP)								
Germany		NO	NO	NO		NO	NO	NO
Greece		NA	NA	NA		NA	NA	NA
Hungary		NA	NA	NA		NA	NA	NA
Iceland		NA	NA	NA		NA	NA	NA
Ireland		NO	0.011	0.000		NO	0.011	0.000
Italy		4.3	0.024	0.001		8.0	0.044	0.001
Japan		IE, NO	0.000	0.000		IE, NO	0.000	0.000
Kazakhstan		NO	NO	NO		NO	NO	NO
Latvia		NA	NA	NA		NA	NA	NA
Liechtenstein								
Lithuania		NA	NA	NA		NA	NA	NA
Luxembourg		NA	NA	NA		NA	NA	NA
Malta		NO	NO	NO		NO	NO	NO
Monaco		NO	NO	NO		NO	NO	NO
Netherlands		NA	NA	NA		NA	NA	NA
New Zealand						NA	NA	NA
Norway		NO	NO	NO		NO	NO	NO
Poland		NA	NA	NA		NA	NA	NA
Portugal								
Romania		NA	NA	NA		NA	NA	NA
Russian Federation		NA	NA	NA		NA	NA	NA
Slovakia		NA	NA	NA		NA	NA	NA
Slovenia		NA	NA	NA		NA	NA	NA
Spain		0.080	0.023	0.002		0.20	0.031	0.002
Sweden		NA	NA	NA		NA	NA	NA
Switzerland								
Ukraine						NA	NA	NA
United Kingdom of Great Britain and Northern Ireland (KP)		NE, NO	NA	NA		NE, NO	NA	NA

[a] Total for controlled burning and wildfires.

[b] For each activity, activity data should be selected between area burned or fuel burned. Units will be ha for area burned, and kg dm for fuel burned. The implied emission factor will refer to the selected activity data with an automatic change in the units.

[c] Area burned (ab) and biomass burned (bb).

Table 6.7(c)

Emissions from biomass burning on grazing land management land[a]

	Base year				2018			
	Activity data	Implied Emission Factor			Activity data	Implied Emission Factor		
	Description of unit area[b]: ab or bb[c]	CO_2	CH_4	N_2O	Description of unit area[b]: ab or bb[c]	CO_2	CH_4	N_2O
		(t/activity data unit)				(t/activity data unit)		
Australia		IE	0.010	0.000		IE, NO	0.007	0.000
Austria		NA	NA	NA		NA	NA	NA
Belgium		NA	NA	NA		NA	NA	NA
Bulgaria						NA	NA	NA
Croatia		NA	NA	NA		NA	NA	NA
Cyprus		NO	NO	NO		NO	NO	NO
Czechia		NA	NA	NA		NA	NA	NA
Denmark (KP)		IE	1.7	0.15		IE	1.7	0.15
Estonia		NA	NA	NA		NA	NA	NA
European Union (KP)								
Finland		NA	NA	NA		NA	NA	NA
France (KP)								
Germany		NO	NO	NO		NO	NO	NO
Greece		NA	NA	NA		NA	NA	NA
Hungary		NA	NA	NA		NA	NA	NA
Iceland		NA, NO	NA	NA		NA, NO	NA	NA
Ireland		42	0.25	0.007		39	0.23	0.006
Italy		NO	NO	NO		NO	NO	NO
Japan		NO	NO	NO		NO	NO	NO
Kazakhstan		NO	NO	NO		NO	NO	IE, NO
Latvia		NA	NA	NA		NA	NA	NA
Liechtenstein								
Lithuania		NA	NA	NA		NA	NA	NA
Luxembourg		NA	NA	NA		NA	NA	NA
Malta		NO	NO	NO		NO	NO	NO
Monaco		NO	NO	NO		NO	NO	NO
Netherlands		NA	NA	NA		NA	NA	NA
New Zealand								
Norway		IE, NO	NE, NO	NE, NO		IE, NO	NE, NO	NE, NO
Poland		NA	NA	NA		NA	NA	NA
Portugal								
Romania						NA	NA	NA
Russian Federation		NA	NA	NA		NA	NA	NA
Slovakia		NA	NA	NA		NA	NA	NA
Slovenia		NA	NA	NA		NA	NA	NA
Spain		NA	NA	NA		NA	NA	NA
Sweden	Area burned	NA	NA	NA	Area burned	NA	NA	NA
Switzerland								
Ukraine						NA	NA	NA
United Kingdom of Great Britain and Northern Ireland (KP)		NO	NA	NA		NO	NA	NA

[a] Total for controlled burning and wildfires. Greenhouse gas emissions from prescribed savanna burning are reported in the agriculture sector.

[b] For each activity, activity data should be selected between area burned or fuel burned. Units will be ha for area burned, and kg dm for fuel burned. The implied emission factor will refer to the selected activity data with an automatic change in the units.

[c] Area burned (ab) and biomass burned (bb).

Table 6.7(d)

Emissions from biomass burning on revegetation land[a]

	Base year				2018			
	Activity data	Implied Emission Factor			Activity data	Implied Emission Factor		
	Description of unit area[b]: ab or bb[c]	CO_2	CH_4	N_2O	Description of unit area[b]: ab or bb[c]	CO_2	CH_4	N_2O
		(t/activity data unit)				(t/activity data unit)		
Australia		IE	IE	IE		IE	IE	IE
Austria		NA	NA	NA		NA	NA	NA
Belgium		NA	NA	NA		NA	NA	NA
Bulgaria						NA	NA	NA
Croatia		NA	NA	NA		NA	NA	NA
Cyprus		NO	NO	NO		NO	NO	NO
Czechia		NA	NA	NA		NA	NA	NA
Denmark (KP)		NA	NA	NA		NA	NA	NA
Estonia		NA	NA	NA		NA	NA	NA
European Union (KP)								
Finland		NA	NA	NA		NA	NA	NA
France (KP)								
Germany		NA	NA	NA		NA	NA	NA
Greece		NA	NA	NA		NA	NA	NA
Hungary		NA	NA	NA		NA	NA	NA
Iceland		NE	NE	NE		NO	NO	NO
Ireland		NA	NA	NA		NA	NA	NA
Italy		NA	NA	NA		NA	NA	NA
Japan		NO	NO	NO		NO	NO	NO
Kazakhstan		NO	NO	NO		NO	NO	NO
Latvia		NA, NO	NA	NA		NA, NO	NA	NA
Liechtenstein								
Lithuania		NA	NA	NA		NA	NA	NA
Luxembourg		NA	NA	NA		NA	NA	NA
Malta		NO	NO	NO		NO	NO	NO
Monaco		NO	NO	NO		NO	NO	NO
Netherlands		NA	NA	NA		NA	NA	NA
New Zealand						NA	NA	NA
Norway		NA	NA	NA		NA	NA	NA
Poland		NA	NA	NA		NA	NA	NA
Portugal								
Romania		NO	NO	NO		NO	NO	NO
Russian Federation		NA	NA	NA		NA	NA	NA
Slovakia		NA	NA	NA		NA	NA	NA
Slovenia		NA	NA	NA		NA	NA	NA
Spain		NA	NA	NA		NA	NA	NA
Sweden	Area burned	NA	NA	NA	Area burned	NA	NA	NA
Switzerland								
Ukraine						NA	NA	NA
United Kingdom of Great Britain and Northern Ireland (KP)		NA	NA	NA		NA	NA	NA

[a] Total for controlled burning and wildfires.

[b] For each activity, activity data should be selected between area burned or fuel burned. Units will be ha for area burned, and kg dm for fuel burned. The implied emission factor will refer to the selected activity data with an automatic change in the units.

[c] Area burned (ab) and biomass burned (bb).

Table 6.7(e)

Emissions from biomass burning on wetland drainage and rewetting land[a]

	Base year				2018			
	Activity data	Implied Emission Factor			Activity data	Implied Emission Factor		
	Description of unit area[b]: ab or bb[c]	CO_2	CH_4	N_2O	Description of unit area[b]: ab or bb[c]	CO_2	CH_4	N_2O
		(t/activity data unit)				(t/activity data unit)		
Australia		NA	NA	NA		NA	NA	NA
Austria		NA	NA	NA		NA	NA	NA
Belgium		NA	NA	NA		NA	NA	NA
Bulgaria						NA	NA	NA
Croatia		NA	NA	NA		NA	NA	NA
Cyprus		NO	NO	NO				
Czechia		NA	NA	NA		NA	NA	NA
Denmark (KP)		NA	NA	NA		NA	NA	NA
Estonia		NA	NA	NA		NA	NA	NA
European Union (KP)								
Finland		NA	NA	NA		NA	NA	NA
France (KP)								
Germany		NA	NA	NA		NA	NA	NA
Greece		NA	NA	NA		NA	NA	NA
Hungary		NA	NA	NA		NA	NA	NA
Iceland		NA	NA	NA		NA	NA	NA
Ireland		NA	NA	NA		NA	NA	NA
Italy		NA	NA	NA		NA	NA	NA
Japan		NA	NA	NA		NA	NA	NA
Kazakhstan		NO	NO	NO		NO	NO	NO
Latvia		NA	NA	NA		NA	NA	NA
Liechtenstein								
Lithuania		NA	NA	NA		NA	NA	NA
Luxembourg		NA	NA	NA		NA	NA	NA
Malta		NO	NO	NO		NO	NO	NO
Monaco		NO	NO	NO		NO	NO	NO
Netherlands		NA	NA	NA		NA	NA	NA
New Zealand						NA	NA	NA
Norway		NA	NA	NA		NA	NA	NA
Poland		NA	NA	NA		NA	NA	NA
Portugal								
Romania		NO	NO	NO		NO	NO	NO
Russian Federation		NA	NA	NA		NA	NA	NA
Slovakia		NA	NA	NA		NA	NA	NA
Slovenia		NA	NA	NA		NA	NA	NA
Spain		NA	NA	NA		NA	NA	NA
Sweden		NA	NA	NA		NA	NA	NA
Switzerland								
Ukraine						NA	NA	NA
United Kingdom of Great Britain and Northern Ireland (KP)		NE	NE	NE		NE	NE	NE

[a] Total for controlled burning and wildfires.

[b] For each activity, activity data should be selected between area burned or fuel burned. Units will be ha for area burned, and kg dm for fuel burned. The implied emission factor will refer to the selected activity data with an automatic change in the units.

[c] Area burned (ab) and biomass burned (bb).