Framework Convention on Climate Change

FCCC/WEB/AGI/2022

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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 22/CMP.1, annex, in conjunction with 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.[4]

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 2020.

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

6. Where it has been submitted, 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.

[1] Decision 13/CP.20, paragraph 8.
[2] The tables, agreed in decision 24/CP.19, can be accessed here: < http://unfccc.int/national_reports/annex_i_ghg_inventories/reporting_requirements/items/5333.php >.
[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 >.
[4] The Doha amendment entered into force on 31 December 2020.

7. The information provided in this document is based on information in the CRF tables of the 2022 national GHG inventories received from 44 Annex I Parties[5] as at 27 May 2022.

8. Four Parties, Denmark, the European Union, 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[6]; 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.

9. 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

10. 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.

11. 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 "–".

12. 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.

13. References to the base year pertain to 1990, except for the following Parties 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).

[5] This number includes 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.

[6] The EU stated in its NIR that the United Kingdom (UK) left the EU on 1 February 2020, but key provisions of Regulation (EU) No 525/2013 ("Mechanism for Monitoring and Reporting GHG") and of Decision No 406/2009/EC ("Effort Sharing") apply to the UK in respect of greenhouse gases emitted during 2019 and 2020. Hence, for the purpose of this report, the information presented for the EU covers 28 member States.

14. 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 CO_2 equivalent, without emissions and removals from LULUCF, but including indirect CO_2 emissions where reported.

15. 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		

16. 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

17. 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 for those cases 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.

18. 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

19. 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		

20. 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

21. The following abbreviations have been used in the tables below:

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 2020
Figure G.2	GHG emissions by gas (without LULUCF): base year and 2020
Figure G.3	GHG emissions by sector (without LULUCF): base year and 2020

Table number	Table name
Table G.1	Submissions used in this report

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
Table 1.2	Stationary combustion: liquid fuels – CO_2 (2020)
Table 1.3	Stationary combustion: solid fuels – CO_2 (2020)
Table 1.4	Stationary combustion: gaseous fuels – CO_2 (2020)
Table 1.5	Stationary combustion: other fossil fuels – CO_2 (2020)
Table 1.6	Road transportation – CO_2, N_2O (2020)
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Table 1.8	Domestic and international aviation – activity data (2020)
Table 1.9	Domestic and international navigation – activity data (2020)
Table 1.10	Fugitive emissions from fuels: coal mining and handling – CH_4 (2020)
Table 1.11(a)	Fugitive emissions from fuels: oil and natural gas – CH_4, CO_2 (2020)
Table 1.11(b)	Fugitive emissions from fuels: oil and natural gas – oil – CH_4, CO_2 (2020)
Table 1.11(c)	Fugitive emissions from fuels: oil and natural gas – natural gas – CH_4, CO_2 (2020)

Table 1.11(d)	Fugitive emissions from fuels: oil and natural gas – venting and flaring – CH_4, CO_2 (2020)
Table 1.12	CO_2 transport and storage (2020)

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 (2020)
Table 2.2	Chemical industry – CO_2 and N_2O (2020)
Table 2.3	Metal industry – CO_2 (2020)
Table 2.4	HFCs, PFCs, SF_6 and NF_3 (2020)

4. Agriculture

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

Table number	Table name
Table 3.1	Enteric fermentation – CH_4 (2020)
Table 3.2	Manure management – CH_4 (2020)
Table 3.3	Manure management – N_2O (2020)
Table 3.4	Agricultural soils – N_2O (2020)

5. Land use, land-use change and forestry

Table number	Table name
Table 4.1(a–b)	Methods and emission factors used (2020)
Table 4.2	Forest land – AD, IEFs, carbon stock changes in pools and net CO_2 emissions/removals (2020)
Table 4.3	Cropland – AD, IEFs, carbon stock changes in pools and net CO_2 emissions/removals (2020)
Table 4.4	Grassland – AD, IEFs, carbon stock changes in pools and net CO_2 emissions/removals (2020)
Table 4.5	Land area (2020)

6. Waste

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

Table number	Table name

Table 5.1(a–b)	Solid waste disposal on land, biological treatment of solid waste, incineration and open burning of waste and wastewater treatment and discharge (2020)

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

Supplementary information for land use, land-use change and forestry activities under the Kyoto Protocol

Table number	Table name
Table 6.1	Selected values (forest parameters), elected activities under Article 3.4, accounting period, forest management cap
Table 6.2(a-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
Table 6.3(a)	Afforestation and reforestation - area and implied carbon stock change factors from the change in carbon stocks for 2020
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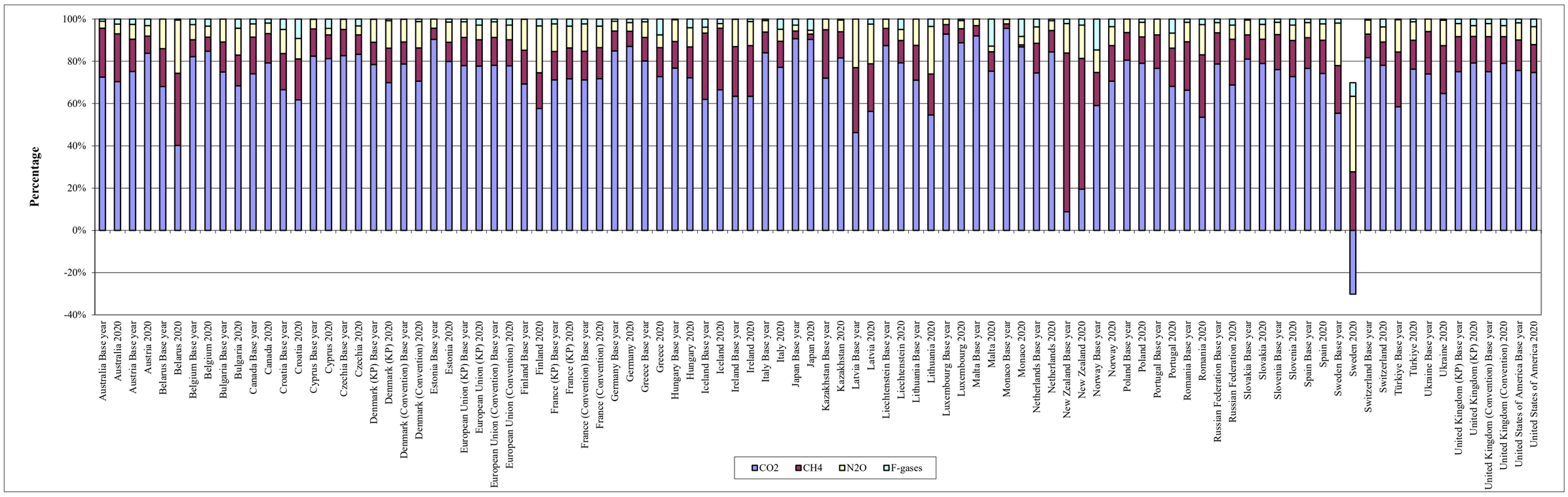
Table 6.3(c)	Forest management - area and implied carbon stock change factors from the change in carbon stocks for 2020
Table 6.3(d)	Cropland management - area and implied carbon stock change factors from the change in carbon stocks for 2020
Table 6.3(e)	Cropland management - area and implied carbon stock change factors from the change in carbon stocks for the base year
Table 6.3(f)	Grazing land management - area and implied carbon stock change factors from the change in carbon stocks for 2020
Table 6.3(g)	Grazing land management - area and implied carbon stock change factors from the change in carbon stocks for the base year
Table 6.3(h)	Revegetation - area and implied carbon stock change factors from the change in carbon stocks for 2020
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 2020
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
Table 6.4	Direct and indirect N_2O emissions from N fertilization for 2020
Table 6.5	CH_4 and N_2O emissions from drained and rewetted organic soils for 2020
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 2020

Table 6.7(a)	Emissions from biomass burning 2020
Table 6.7(b)	Emissions from biomass burning on cropland management land
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 2020

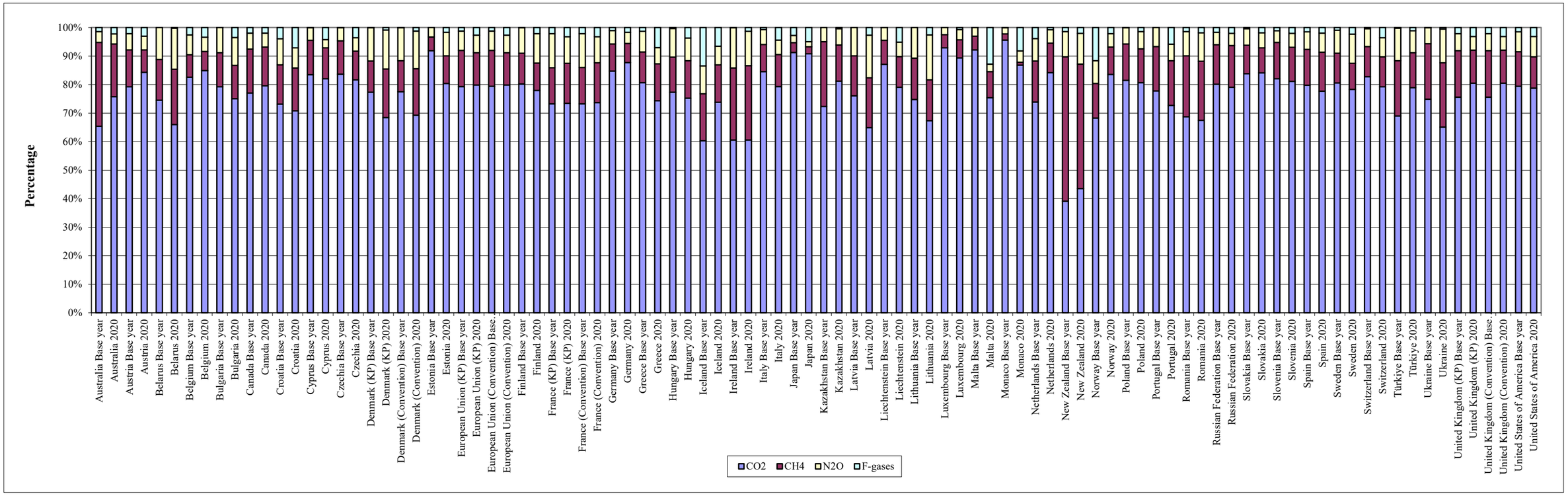


[a] The national totals and emissions by CO_2 in this graph include indirect CO_2 emissions from the atmospheric oxidation of CH_4, CO and NMVOCs for the following Parties: Canada, Cyprus, Czechia, Denmark (Convention), Denmark (KP), European Union (Convention), European Union (KP), Finland, Japan, Latvia, Netherlands, Portugal, Slovakia 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 2020

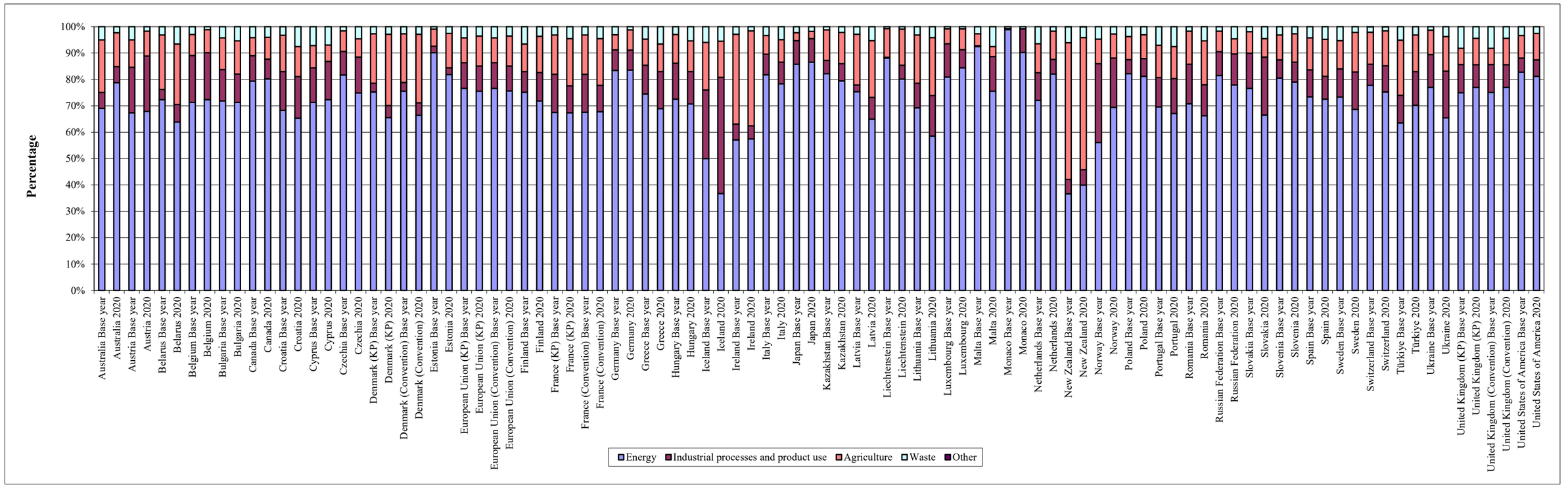


[a] The national totals and emissions by CO_2 in this graph include indirect CO_2 emissions from the atmospheric oxidation of CH_4, CO and NMVOCs for the following Parties: Canada, Cyprus, Czechia, Denmark (Convention), Denmark (KP), European Union (Convention), European Union (K Finland, Japan, Latvia, Netherlands, Portugal, Slovakia 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 2020



[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, Cyprus, Czechia, Denmark (Convention), Denmark (KP), European Union (Convention), European Union (KP), Finland, Japan, Latvia, Netherlands, Portugal, Slovakia 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

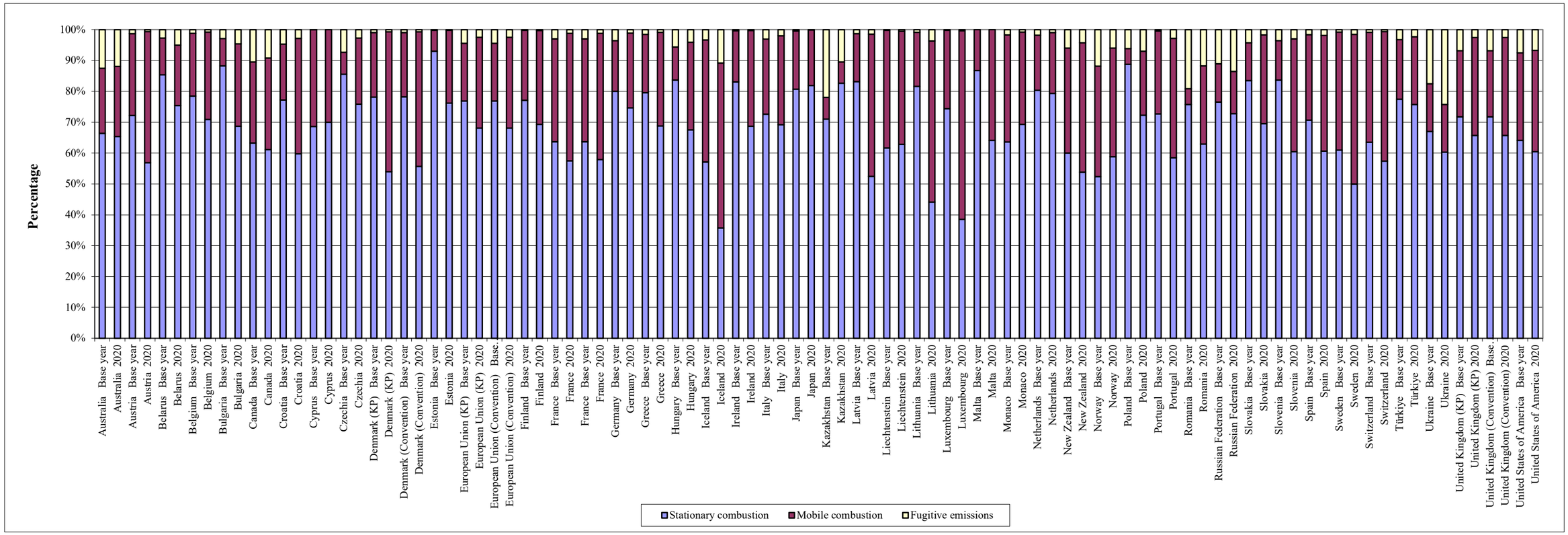
Submissions used in this report

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	15 April 2022	1990-2019	27 May 2022	27 May 2022 (1)	6.0.8	27 May 2022 (1)	6.0.8
Austria	15 April 2022	1990-2019	15 April 2022	15 April 2022 (3)	6.0.8	15 April 2022 (3)	6.0.8
Belarus	14 April 2022	1990-2019	15 April 2022	26 May 2022 (5)	6.0.8	NA	NA
Belgium	14 April 2022	1990-2019	23 May 2022	23 May 2022 (2)	6.0.8	23 May 2022 (2)	6.0.8
Bulgaria	15 April 2022	1988-2019	15 April 2022	15 April 2022 (1)	6.0.8	15 April 2022 (1)	6.0.8
Canada	12 April 2022	1990-2019	14 April 2022	14 April 2022 (1)	6.0.8	NA	NA
Croatia	14 April 2022	1990-2019	26 May 2022	26 May 2022 (2)	6.0.8	26 May 2022 (2)	6.0.8
Cyprus	09 April 2022	1990-2019	05 April 2022	24 March 2022 (5)	6.0.8	24 March 2022 (5)	6.0.8
Czechia	14 April 2022	1990-2019	14 April 2022	14 April 2022 (1)	6.0.8	14 April 2022 (1)	6.0.8
Denmark (KP)	15 April 2022	1990-2019	15 April 2022	15 April 2022 (1)	6.0.8	15 April 2022 (1)	6.0.8
Denmark (Convention)	15 April 2022	1990-2019	15 April 2022	15 April 2022 (1)	6.0.8	15 April 2022 (1)	NA
Estonia	15 April 2022	1990-2019	12 April 2022	12 April 2022 (1)	6.0.8	12 April 2022 (1)	6.0.8
European Union (KP)	14 April 2022	1990-2019	27 May 2022	26 May 2022 (2)	6.0.8	26 May 2022 (2)	6.0.8
European Union (Convention)	14 April 2022	1990-2019	27 May 2022	26 May 2022 (2)	6.0.8	NA	NA
Finland	13 April 2022	1990-2019	14 April 2022	14 April 2022 (6)	6.0.8	13 April 2022 (6)	6.0.8
France (KP)	21 April 2022	1990-2019	14 April 2022	14 April 2022 (1)	6.0.8	14 April 2022 (1)	6.0.8
France (Convention)	15 April 2022	1990-2019	14 April 2022	12 April 2022 (1)	6.0.8	NA	NA
Germany	14 April 2022	1990-2019	14 April 2022	08 April 2022 (1)	6.0.8	08 April 2022 (1)	6.0.8
Greece	15 April 2022	1990-2019	15 April 2022	13 May 2022 (4)	6.0.8	13 May 2022 (4)	6.0.8
Hungary	15 April 2022	1985-87, 1986-2019	27 May 2022	27 May 2022 (3)	6.0.8	27 May 2022 (3)	6.0.8
Iceland	15 April 2022	1990-2019	12 April 2022	06 May 2022 (2)	6.0.8	06 May 2022 (2)	6.0.8
Ireland	13 April 2022	1990-2019	08 April 2022	08 April 2022 (1)	6.0.8	08 April 2022 (1)	6.0.8
Italy	12 April 2022	1990-2019	12 April 2022	08 April 2022 (1)	6.0.8	08 April 2022 (1)	6.0.8
Japan	13 April 2022	1990-2019	15 April 2022	15 April 2022 (1)	6.0.8	15 April 2022 (1)	6.0.8
Kazakhstan	16 April 2022	1990-2019	15 April 2022	15 April 2022 (1)	6.0.8	15 April 2022 (1)	6.0.8
Latvia	13 April 2022	1990-2019	14 April 2022	14 April 2022 (2)	6.0.8	14 April 2022 (2)	6.0.8
Liechtenstein	14 April 2022	1990-2019	14 April 2022	14 April 2022 (1)	6.0.8	14 April 2022 (1)	6.0.8
Lithuania	15 April 2022	1990-2019	15 April 2022	25 May 2022 (2)	6.0.8	25 May 2022 (2)	6.0.8
Luxembourg	13 April 2022	1990-2019	06 May 2022	14 April 2022 (1)	6.0.8	14 April 2022 (1)	6.0.8
Malta	15 April 2022	1990-2019	11 April 2022	13 April 2022 (3)	6.0.8	13 April 2022 (3)	6.0.8
Monaco	14 April 2022	1990-2019	13 April 2022	11 April 2022 (1)	6.0.8	11 April 2022 (1)	6.0.8
Netherlands	15 April 2022	1990-2019	14 April 2022	14 April 2022 (1)	6.0.8	14 April 2022 (1)	6.0.8
New Zealand	14 April 2022	1990-2019	14 April 2022	14 April 2022 (1)	6.0.8	14 April 2022 (1)	6.0.8
Norway	15 April 2022	1990-2019	08 April 2022	08 April 2022 (1)	6.0.8	08 April 2022 (1)	6.0.8
Poland	14 April 2022	1988-2019	24 May 2022	24 May 2022 (3)	6.0.8	24 May 2022 (3)	6.0.8
Portugal	13 April 2022	1990-2019	07 April 2022	07 April 2022 (1)	6.0.8	07 April 2022 (1)	6.0.8
Romania	13 April 2022	1989-2019	06 May 2022	06 May 2022 (5)	6.0.8	06 May 2022 (5)	6.0.8
Russian Federation	15 April 2022	1990-2019	24 April 2022	15 April 2022 (2)	6.0.8	15 April 2022 (2)	6.0.8
Slovakia	14 April 2022	1990-2019	14 April 2022	13 April 2022 (4)	6.0.8	13 April 2022 (4)	6.0.8
Slovenia	12 April 2022	1986-2019	15 April 2022	13 April 2022 (4)	6.0.8	13 April 2022 (4)	6.0.8
Spain	15 March 2022	1990-2019	12 April 2022	12 April 2022 (1)	6.0.8	12 April 2022 (1)	6.0.8
Sweden	14 April 2022	1990-2019	12 April 2022	12 April 2022 (2)	6.0.8	12 April 2022 (2)	6.0.8
Switzerland	12 April 2022	1990-2019	14 April 2022	14 April 2022 (1)	6.0.8	14 April 2022 (1)	6.0.8
Türkiye	13 April 2022	1990-2019	14 April 2022	14 April 2022 (1)	6.0.8	NA	NA
Ukraine	15 April 2022	1990-2019	13 May 2022	13 May 2022 (1)	6.0.8	13 May 2022 (1)	6.0.8
United Kingdom of Great Britain and Northern Ireland (KP)	15 April 2022	1990-2019	14 April 2022	11 May 2022 (2)	6.0.8	11 May 2022 (2)	6.0.8
United Kingdom of Great Britain and Northern Ireland (Convention)	15 April 2022	1990-2019	14 April 2022	11 May 2022 (2)	6.0.8	NA	NA
United States of America	15 April 2022	1990-2019	15 April 2022	15 April 2022 (1)	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	251 675	1.12
Australia 2020	361 868	361 040	0.23
Austria Base year	51 612	51 058	1.09
Austria 2020	48 616	48 666	-0.10
Belarus Base year	106 280	100 945	5.29
Belarus 2020	48 107	53 032	-9.29
Belgium Base year	91 846	101 526	-9.53
Belgium 2020	73 062	75 310	-2.98
Bulgaria Base year[b]	84 385	77 906	8.32
Bulgaria 2020	34 528	32 755	5.41
Canada Base year	413 915	411 251	0.65
Canada 2020	478 867	479 261	-0.08
Croatia Base year[b]	20 165	19 780	1.94
Croatia 2020	14 556	14 500	0.39
Cyprus Base year	4 281	3 933	8.86
Cyprus 2020	5 878	6 364	-7.63
Czechia Base year	150 039	146 650	2.31
Czechia 2020	79 328	80 637	-1.62
Denmark Base year (KP)	51 147	51 331	-0.36
Denmark 2020 (KP)	25 864	26 355	-1.86
Denmark Base year (Convention)	51 783	52 621	-1.59
Denmark 2020 (Convention)	26 425	28 016	-5.68
Estonia Base year	36 551	35 948	1.68
Estonia 2020	13 094	9 222	41.99
European Union (KP) Base year	3 991 971	4 067 708	-1.86
European Union (KP) 2020	2 644 255	2 682 539	-1.43
European Union (Convention) Base year	3 990 034	4 063 796	-1.82
European Union (Convention) 2020	2 642 047	2 679 121	-1.38
Finland Base year	52 654	52 473	0.35
Finland 2020	33 514	33 434	0.24
France Base year (KP)	352 273	347 074	1.50
France 2020 (KP)	254 396	256 969	-1.00
France Base year (Convention)	355 201	349 381	1.67
France 2020 (Convention)	261 386	262 710	-0.50
Germany Base year	986 690	985 253	0.15
Germany 2020	577 426	593 070	-2.64
Greece Base year	74 770	74 634	0.18
Greece 2020	49 192	50 513	-2.62
Hungary Base year[b]	74 245	74 187	0.08
Hungary 2020	41 754	41 738	0.04
Iceland Base year	1 767	1 739	1.62
Iceland 2020	1 510	1 459	3.46
Ireland Base year	30 760	30 148	2.03
Ireland 2020	32 518	32 548	-0.09
Italy Base year	396 451	405 145	-2.15
Italy 2020	283 741	285 902	-0.76
Japan Base year	1 070 662	1 078 663	-0.74
Japan 2020	982 775	986 615	-0.39
Kazakhstan Base year	267 943	244 057	9.79
Kazakhstan 2020	228 429	240 987	-5.21
Latvia Base year	18 853	18 645	1.11
Latvia 2020	6 265	6 319	-0.85
Liechtenstein Base year	199	199	0.01
Liechtenstein 2020	144	142	1.65
Lithuania Base year	32 518	32 219	0.93
Lithuania 2020	11 155	11 029	1.14
Luxembourg Base year	10 194	10 219	-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 2020	7 504	7 522	-0.25
Malta Base year	2 308	2 389	-3.40
Malta 2020	1 606	1 594	0.71
Monaco Base year	97	98	-1.19
Monaco 2020	60	61	-0.19
Netherlands Base year	153 002	154 482	-0.96
Netherlands 2020	129 884	131 106	-0.93
New Zealand Base year	22 979	22 027	4.32
New Zealand 2020	31 918	29 769	7.22
Norway Base year	25 402	24 707	2.81
Norway 2020	32 054	31 457	1.90
Poland Base year[b]	481 154	438 905	9.63
Poland 2020	280 334	278 094	0.81
Portugal Base year	39 652	39 397	0.65
Portugal 2020	36 732	36 600	0.36
Romania Base year[b]	183 307	174 084	5.30
Romania 2020	60 499	62 508	-3.21
Russian Federation Base year	2 362 968	2 264 027	4.37
Russian Federation 2020	1 456 371	1 372 536	6.11
Slovakia Base year	52 455	53 156	-1.32
Slovakia 2020	23 919	23 724	0.82
Slovenia Base year[b]	15 582	15 516	0.42
Slovenia 2020	11 937	11 903	0.29
Spain Base year	216 748	206 819	4.80
Spain 2020	193 648	192 037	0.84
Sweden Base year	45 863	51 011	-10.09
Sweden 2020	31 272	30 499	2.53
Switzerland Base year	41 197	40 881	0.78
Switzerland 2020	32 267	32 124	0.44
Türkiye Base year	135 077	129 671	4.17
Türkiye 2020	368 822	352 843	4.53
Ukraine Base year	608 895	588 769	3.42
Ukraine 2020	155 071	155 750	-0.44
United Kingdom of Great Britain and Northern Ireland (KP) Base year	545 586	549 362	-0.69
United Kingdom of Great Britain and Northern Ireland (KP) 2020	299 097	300 162	-0.35
United Kingdom of Great Britain and Northern Ireland (Convention) Base year	546 362	550 069	-0.67
United Kingdom of Great Britain and Northern Ireland (Convention) 2020	299 720	300 820	-0.37
United States of America Base year	4 805 958	4 856 289	-1.04
United States of America 2020	4 477 835	4 476 779	0.02

[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 (2020)

	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	7.83	GCV	T2	CS, PS	68	70	59	70	T2	CS	69	T2, T3	CS	68	69	61	69	T1, T2	CS	NO
Austria	11.20	NCV	T1, T2	CS, D	76	78	76	NO	T1, T2, T3	CS, D	75	D, T1, T2, T3	CS, D	75	74	75	74	T1, T2	CS, D	NO
Belarus	8.61	NCV	T1, T2	CS, D	68	76	63	NO	T1, T2	CS, D	74	T1, T2	CS, D	73	74	65	74	T1, T2	CS, D	73
Belgium	12.07	NCV	CS, T1, T3	D, PS	67	74	67	NO	CS, T1, T3	D, PS	76	CS, T1, T3	D	74	74	73	74	CS, T1, T3	D	NO
Bulgaria	5.48	NCV	T1, T2	CS, D	58	77	57	65	T1, T2	CS, D	83	T1, T2	CS, D	72	70	64	74	T1	D	NO
Canada	10.97	GCV	T2	CS	59	77	56	57	M, T1, T2, T3	CS	70	M, T1, T2, T3	CS	68	66	68	69	M, T2, T3	CS	NO
Croatia	9.38	NCV	T1, T2	CS, D	66	75	66	NO	T1	D	82	T1	D	72	71	69	74			NO
Cyprus	47.78	NCV	CS, T1	CS, D	77	77	NO	74	CS, T1	CS, D	153	T1	D	71	69	70	73	T1	D	72
Czechia	1.84	NCV	T1, T2	CS, D	58	63	55	74	T1, T2	CS, D	72	T1, T2	CS, D	73	70	66	74	T1	D	NO
Denmark (KP)	10.67	NCV	T1, T2, T3	CS, D, PS	59	77	57	74	CR, M, T1, T2, T3	CS, D, PS	82	CR, M, T1, T2, T3	CS, D	73	73	73	74	CR, M, T2	CS	NO
Denmark (Convention)	13.33	NCV	CS, T1, T2, T3	CS, D, PS	62	77	57	74	CR, M, T1, T2, T3	CS, D, PS	82	CR, M, T1, T2, T3	CS, D	74	73	73	74	CR, M, T1, T2	CS, D	NO
Estonia	5.93	NCV	T1, T2, T3	CS, D, PS	75	75	NO	IE, NO	T1, T2, T3	CS, D, PS	73	T1, T2	CS, D	73	73	68	73			NO
European Union (KP)	10.36				68	76	65	74			74			73	73	72	74			74
European Union (Convention)	10.34				68	76	65	74			74			73	73	72	74			74
Finland	17.44	NCV	T3	CS, D, PS	56	69	52	NO	T3	CS, D, PS	68	T1, T2, T3	CS, D	73	74	73	73	T2	CS	71
France (KP)	12.34	NCV	T2, T3	CS, PS	64	76	55	NO	T2, T3	CS, PS	75	T1, T2	CS, D	73	73	72	73			74
France (Convention)	12.74	NCV	T2, T3	CS, PS	64	76	55	NO	T2, T3	CS, PS	75	T1, T2	CS, D	73	73	72	74			74
Germany	11.38	NCV	CS	CS	68	77	67	74	CS, T1	CS, D	72	CS, T1, T2, T3	CS, D	73	73	74	73	CS, D, M	CS, D	74
Greece	20.02	NCV	T1, T2	D, PS	71	77	68	NO	T1, T2	CS, D, PS	83	T1, T2	CS, D	73	68	73	72	T1	D	NO
Hungary	5.98	NCV	T1, T2, T3	CS, D, PS	62	77	61	74	T1, T2, T3	CS, D, PS	77	T1, T2	CS, D	72	69	64	73	T2	CS	
Iceland	12.90	NCV	T1	D	74	74	NO	NO	T1	D	73	T1, T2	CS, D	74	69	67	74	T1	D	73
Ireland	12.45	NCV	T1, T3	CS, D, PS	75	77	73	73	T1, T2, T3	CS, D, PS	79	T1, T2	CS, D	72	70	72	73			IE, NO
Italy	9.63	NCV	T3	CS	70	76	70	NO	T2	CS	78	T2	CS	71	67	69	73	T2	CS	NO
Japan	15.36	GCV	CS, T2	CS	66	69	65	70	CS, T2	CS	66	CS, T2	CS	67	68	65	70			NO
Kazakhstan	6.55	NCV	T1	D	71	77	67	73	T1	D	75	T1	D	67	73	63	69	T1	D	73
Latvia	8.65	NCV	T1, T2	CS, D	75	76	NO	75	T1, T2	CS, D, PS	73	T1, T2	CS, D	73	73	71	75	T1	D	NO
Liechtenstein	22.96	NCV	T2	CS	NA, NO		NA, NO	NO	T1, T2	CS, D	74	T1, T2	CS, D	74	74	74	73			NO
Lithuania	7.93	NCV	T1, T2, T3	CS, D, PS	67	72	67	73	T1, T2	CS, D, OTH	72	T2	CS	71	71	69	72	T2	CS	NO
Luxembourg	11.95	NCV	T2	CS	74	74	NO	NO	T1, T2, T3	CS, D, PS	74	T1, T2	CS, D	74	74	74	74	T1, T2	CS, D	NO
Malta	13.57	NCV	T2	CS	74	74	NO	NO	T1	D	73	T1	D	70	72	63	74	T1	D	NO
Monaco	19.65	NCV	T1, T2	CS, D	77	77	NO	NO	T2	CS	72	T1, T2	CS, D	74	75	74	NO			NO
Netherlands	11.19	NCV	CS, T2	CS, D	71	66	71	NO	T2	CS, D	64	T1, T2	CS, D	72	72	71	72	T2	CS	NO
New Zealand	6.94	GCV	T2	CS	67	69	66	70	T2	CS	68	T2	CS	68	68	66	69			NO
Norway	12.85	NCV	T1, T2, T3	CS, PS	58	26	51	73	T1, T2, T3	CS, PS	73	T1, T2	CS, PS	73	73	72	73	T2	CS	74
Poland	4.43	NCV	T1, T2	CS, D	71	76	68	74	T1, T2	CS, D	68	T1, T2	CS, D	72	72	64	74			IE
Portugal	12.60	NCV	T1, T2, T3	CR, D, PS	62	77	55	NO	T1, T2, T3	CR, D, PS	74	T1, T2	CS, D	69	68	64	74	T1	D	NO
Romania	8.43	NCV	T1, T2, T3	CS, D, PS	67	72	64	72	T1, T2, T3	CS, D, PS	74	T1, T2	CS, D	73	71	65	80	T1, T2	CS, D	80
Russian Federation	7.86	NCV	T1, T2	CS, D	74	76	73	74	T1, T2, T3	CS, D	74	T1, T2	CS, D	66	76	63	74	T1, T2	CS, D	74
Slovakia	4.91	NCV	T2, T3	CS, PS	71	77	71	64	T2	CS	97	T1, T2	CS	72	69	63	73	T1, T2	CS, D	63
Slovenia	7.73	NCV	T1, T2	CS, D, PS	68	68	NO	NO	T1, T2, T3	CS, D, PS	78	T1, T2	CS, D	72	71	72	74	T1	D	NO
Spain	15.67	NCV	T1, T2, T3	CS, D, OTH, PS	64	77	57	74	CR, T1, T2, T3	CR, CS, D, PS	86	CR, T1, T2, T3	CR, CS, D, OTH	72	73	70	73	CR, T1, T2	CS, D	IE, NO
Sweden	15.29	NCV	T2	CS	63	C, NO	C, NO	IE, NO	T1, T2	CS	70	T1, T2	CS	72	72	72	72			NO
Switzerland	20.22	NCV	T2, T3	CS	55	74	54		T2, T3	CS, PS	73	T1, T2, T3	CS, D	74	74	74	73	T2, T3	CS	NA
Türkiye	6.56	NCV	T2, T3	CS, D, PS	76	77	76	NO	T1, T2	CS, D	94	T1, T2	CS, D	71	67	63	72			
Ukraine	0.44	NCV	T1, T2, T3	CS, D	73	75	74	69	T1, T2	CS, D	65	T1, T2	CS, D	66	69	66	64	T1	D	NA
United Kingdom of Great Britain and Northern Ireland (KP)	9.35	NCV	T1, T2	CS, D	68	76	66	75	T1, T2, T3	CS, D	72	T1, T2, T3	CS, D	74	74	72	78	T1	CS	IE, NO
United Kingdom of Great Britain and Northern Ireland (Convention)	9.46	NCV	T1, T2	CS, D	69	76	66	75	T1, T2, T3	CS, D	72	T1, T2, T3	CS, D	74	74	72	78	T1	CS	IE, NO
United States of America	6.61	GCV	T2	CS	82	83	75	75	T2	CS	75	T2	CS, D	65	66	64	75	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 CH4, CO and NMVOCs for the following Parties: Canada, Cyprus, Czechia, Denmark (Convention), Denmark (KP), European Union (Convention), European Union (KP), Finland, Japan, Latvia, Netherlands, Portugal, Slovakia 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 (2020)

	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	27.95	GCV	T2	CS, PS	91	91	NO	77	T2	CS	81	T2, T3	CS	NO	NO	NO	NO	T1, T2	CS	NO
Austria	2.55	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	2.77	NCV	T1, T2	CS, D	106	106	NO	NA, NO	T1, T2	CS, D	97	T1, T2	CS, D	106	106	106	106	T1, T2	CS, D	106
Belgium	5.23	NCV	CS, T1, T3	D, PS	209	248	130	40	CS, T1, T3	D, PS	98	CS, T1, T3	D	95	95	95	95	CS, T1, T3	D	NO
Bulgaria	33.12	NCV	T1, T2	CS, D	103	103	NO	104	T1, T2	CS, D	92	T1, T2	CS, D	91	92	91	94	T1	D	NO
Canada	5.76	GCV	T2	CS	92	92	NO	NO	M, T1, T2, T3	CS	69	M, T1, T2, T3	CS	96	NO	NO	96	M, T2, T3	CS	NO
Croatia	5.97	NCV	T1, T2	CS, D	92	92	NO	NO	T1	D	97	T1	D	99	IE, NO	99	NO			NO
Cyprus	0.77	NCV	CS, T1	CS, D	NO	NO	NO	NO	CS, T1	CS, D	118	T1	D	NO	NO	NO	NO	T1	D	NO
Czechia	38.43	NCV	T1, T2	CS, D	97	98	NO	92	T1, T2	CS, D	92	T1, T2	CS, D	94	97	94	97	T1	D	NO
Denmark (KP)	7.53	NCV	T1, T2, T3	CS, D, PS	94	94	NO	NO	CR, M, T1, T2, T3	CS, D, PS	95	CR, M, T1, T2, T3	CS, D	94	NO	NO	94	CR, M, T2	CS	NO
Denmark (Convention)	7.19	NCV	CS, T1, T2, T3	CS, D, PS	94	94	NO	NO	CR, M, T1, T2, T3	CS, D, PS	95	CR, M, T1, T2, T3	CS, D	94	NO	NO	94	CR, M, T1, T2	CS, D	
Estonia	45.05	NCV	T1, T2, T3	CS, D, PS	44	97	NO	19	T1, T2, T3	CS, D, PS	97	T1, T2	CS, D	94	94.47	94	94			NO
European Union (KP)	14.67				103	104	66	86			108			95	97	95	95			99
European Union (Convention)	14.69				103	104	66	86			108			95	97	95	95			99
Finland	10.96	NCV	T3	CS, D, PS	114	117	NO	85	T3	CS, D, PS	89	T1, T2, T3	CS, D	92	NO	88	92	T2	CS	NO
France (KP)	3.44	NCV	T2, T3	CS, PS	142	129	NO	204	T2, T3	CS, PS	116	T1, T2	CS, D	95	95	95	NO			NO
France (Convention)	3.93	NCV	T2, T3	CS, PS	142	129	NO	204	T2, T3	CS, PS	109	T1, T2	CS, D	95	95	95	NO			NO
Germany	24.96	NCV	CS	CS	107	106	41	137	CS, T1	CS, D	136	CS, T1, T2, T3	CS, D	99	98	99	NO	CS, D, M	CS, D	99
Greece	12.59	NCV	T1, T2	D, PS	129	129	NO	NO	T1, T2	CS, D, PS	93	T1, T2	CS, D	99	IE, NO	99	99	T1	D	NO
Hungary	9.37	NCV	T1, T2, T3	CS, D, PS	113	118	NO	48	T1, T2, T3	CS, D, PS	84	T1, T2	CS, D	101	100	101	97	T2	CS	
Iceland	0.00	NCV	T1	D	NO	NO	NO	NO	T1	D	NA, NO	T1, T2	CS, D	NO	NO	NO	NO	T1	D	NO
Ireland	3.20	NCV	T1, T3	CS, D, PS	93	93	NO	NO	T1, T2, T3	CS, D, PS	95	T1, T2	CS, D	97	95	97	NO			IE, NO
Italy	5.40	NCV	T3	CS	102	94	NO	158	T2	CS	60	T2	CS	NO	NO	NO	NO	T2	CS	NO
Japan	34.18	GCV	CS, T2	CS	88	89	89	82	CS, T2	CS	92	CS, T2	CS	93	93	NO	110			NO
Kazakhstan	49.50	NCV	T1	D	96	96	98	95	T1	D	87	T1	D	96	96	96	96	T1	D	96
Latvia	0.89	NCV	T1, T2	CS, D	97	97	NO	NO	T1, T2	CS, D, PS	97	T1, T2	CS, D	97	97	97	NO	T1	D	NO
Liechtenstein	0.00	NCV	T2	CS	NA, NO		NA, NO	NO	T1, T2	CS, D	NA, NO	T1, T2	CS, D	NO		NO	NO			NO
Lithuania	2.69	NCV	T1, T2, T3	CS, D, PS	95	95	NO	NO	T1, T2	CS, D, OTH	97	T2	CS	95	95	95	95	T2	CS	NO
Luxembourg	1.55	NCV	T2	CS	NO	NO	NO	NO	T1, T2, T3	CS, D, PS	95	T1, T2	CS, D	98	NO	98	NO	T1, T2	CS, D	NO
Malta	0.00	NCV	T2	CS	NO	NO	NO	NO	T1	D	NO	T1	D	NO	NO	NO	NO	T1	D	NO
Monaco	0.00	NCV	T1, T2	CS, D	NO	NO	NO	NO	T2	CS	NO	T1, T2	CS, D	NO	NO	NO	NO			NO
Netherlands	9.91	NCV	CS, T2	CS, D	131	133	NO	114	T2	CS, D	51	T1, T2	CS, D	101	101	100	NO	T2	CS	NO
New Zealand	5.11	GCV	T2	CS	93	93	NO	NO	T2	CS	92	T2	CS	92	92	92	92			NO
Norway	0.92	NCV	T1, T2, T3	CS, PS	90	90	NO		T1, T2, T3	CS, PS	114	T1, T2	CS, PS	NO	NO	NO	NO	T2	CS	
Poland	43.09	NCV	T1, T2	CS, D	99	101	95	49	T1, T2	CS, D	103	T1, T2	CS, D	94	95	94	94			IE
Portugal	3.67	NCV	T1, T2, T3	CR, D, PS	93	93	NO	NO	T1, T2, T3	CR, D, PS	95	T1, T2	CS, D	NO	NO	NO	NO	T1	D	NO
Romania	9.62	NCV	T1, T2, T3	CS, D, PS	83	83	74	NO	T1, T2, T3	CS, D, PS	94	T1, T2	CS, D	88	81	81	106	T1, T2	CS, D	NO
Russian Federation	12.67	NCV	T1, T2	CS, D	95	95	NA	52	T1, T2, T3	CS, D	53	T1, T2	CS, D	96	95	96	96	T1, T2	CS, D	95
Slovakia	17.01	NCV	T2, T3	CS, PS	118	98	NO	191	T2	CS	117	T1, T2	CS	100	103	97	96	T1, T2	CS, D	99
Slovenia	27.10	NCV	T1, T2	CS, D, PS	102	102	NO	NO	T1, T2, T3	CS, D, PS	103	T1, T2	CS, D	96	NO	96	NO	T1	D	NO
Spain	4.14	NCV	T1, T2, T3	CS, D, OTH, PS	115	116	NO	83	CR, T1, T2, T3	CR, CS, D, PS	153	CR, T1, T2, T3	CR, CS, D, OTH	105	106	103	NO	CR, T1, T2	CS, D	IE, NO
Sweden	8.03	NCV	T2	CS	190	247	NO	84	T1, T2	CS	117	T1, T2	CS	NO	NO	NO	NO			NO
Switzerland	0.80	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
Türkiye	28.28	NCV	T2, T3	CS, D, PS	102	101	NO	156	T1, T2	CS, D	97	T1, T2	CS, D	96	98	96	NO			
Ukraine	20.43	NCV	T1, T2, T3	CS, D	90	92	NA, NO	54	T1, T2	CS, D	82	T1, T2	CS, D	93	84	95	95	T1	D	NA
United Kingdom of Great Britain and Northern Ireland (KP)	2.76	NCV	T1, T2	CS, D	97	93	NO	131	T1, T2, T3	CS, D	94	T1, T2, T3	CS, D	94	94	94	NO	T1	CS	IE, NO
United Kingdom of Great Britain and Northern Ireland (Convention)	2.76	NCV	T1, T2	CS, D	97	93	NO	131	T1, T2, T3	CS, D	94	T1, T2, T3	CS, D	94	94	94	NO	T1	CS	IE, NO
United States of America	14.09	GCV	T2	CS	91	91	NA, NO	91	T2	CS	91	T2	CS, D	91	91	NA, NO	NA, NO	CS, T2	CS	78

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 CH4, CO and NMVOCs for the following Parties: Canada, Cyprus, Czechia, Denmark (Convention), Denmark (KP), European Union (Convention), European Union (KP), Finland, Japan, Latvia, Netherlands, Portugal, Slovakia 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 (2020)

	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	15.04	GCV	T2	CS, PS	51	51	51	51	T2	CS	51	T2, T3	CS	51	51	51	51	T1, T2	CS	NO
Austria	21.44	NCV	T1, T2	CS, D	56	56	56	56	T1, T2, T3	CS, D	56	D, T1, T2, T3	CS, D	56	56	56	56	T1, T2	CS, D	NO
Belarus	35.03	NCV	T1, T2	CS, D	54	54	54	NO	T1, T2	CS, D	54	T1, T2	CS, D	54	54	54	54	T1, T2	CS, D	54
Belgium	30.50	NCV	CS, T1, T3	D, PS	56	56	56	NO	CS, T1, T3	D, PS	55	CS, T1, T3	D	57	57	57	57	CS, T1, T3	D	NO
Bulgaria	8.73	NCV	T1, T2	CS, D	56	56	56	56	T1, T2	CS, D	56	T1, T2	CS, D	56	56	56	56	T1	D	NO
Canada	31.21	GCV	T2	CS	51	50	50	51	M, T1, T2, T3	CS	50	M, T1, T2, T3	CS	50	50	50	50	M, T2, T3	CS	NO
Croatia	20.58	NCV	T1, T2	CS, D	56	55	56	56	T1	D	56	T1	D	56	56	56	56			NO
Cyprus	0.00		CS, T1	CS, D	NO	NO	NO	NO	CS, T1	CS, D	NO	T1	D		NO	NO	NO	T1	D	NO
Czechia	14.36	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)	11.43	NCV	T1, T2, T3	CS, D, PS	56	56	56	57	CR, M, T1, T2, T3	CS, D, PS	56	CR, M, T1, T2, T3	CS, D	56	56	56	56	CR, M, T2	CS	NO
Denmark (Convention)	10.92	NCV	CS, T1, T2, T3	CS, D, PS	56	56	56	57	CR, M, T1, T2, T3	CS, D, PS	56	CR, M, T1, T2, T3	CS, D	56	56	56	56	CR, M, T1, T2	CS, D	
Estonia	6.83	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	55			NO
European Union (KP)	23.18				57	56	56	60			56			56	56	56	56			56
European Union (Convention)	23.22				57	56	56	60			56			56	56	56	56			56
Finland	8.33	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)	19.80	NCV	T2, T3	CS, PS	56	56	55	NO	T2, T3	CS, PS	56	T1, T2	CS, D	56	56	56	56			56
France (Convention)	19.48	NCV	T2, T3	CS, PS	56	56	55	NO	T2, T3	CS, PS	56	T1, T2	CS, D	56	56	56	56			56
Germany	22.15	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	56
Greece	14.07	NCV	T1, T2	D, PS	56	56	IE, NO	58	T1, T2	CS, D, PS	56	T1, T2	CS, D	56	56	56	IE, NO	T1	D	NO
Hungary	30.13	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	56
Iceland	0.00	NCV	T1	D	NO	NO	NO	NO	T1	D	NO	T1, T2	CS, D		NO	NO	NO	T1	D	NO
Ireland	18.50	NCV	T1, T3	CS, D, PS	56	56	7.8	55	T1, T2, T3	CS, D, PS	56	T1, T2	CS, D	56	56	56	NO			IE, NO
Italy	35.96	NCV	T3	CS	58	58	58	58	T2	CS	58	T2	CS	58	58	58	58	T2	CS	NO
Japan	19.14	GCV	CS, T2	CS	51	51	51	51	CS, T2	CS	51	CS, T2	CS	51	51	51	51			NO
Kazakhstan	8.94	NCV	T1	D	56	56	56	56	T1	D	37	T1	D	56	56	56	56	T1	D	56
Latvia	20.01	NCV	T1, T2	CS, D	55	55	NO	55	T1, T2	CS, D, PS	55	T1, T2	CS, D	55	55	55	55	T1	D	NO
Liechtenstein	26.90	NCV	T2	CS	56	56	NA, NO	NO	T1, T2	CS, D	56	T1, T2	CS, D	56	56	56	NO			NO
Lithuania	11.91	NCV	T1, T2, T3	CS, D, PS	55	55	55	55	T1, T2	CS, D, OTH	55	T2	CS	55	55	55	55	T2	CS	NO
Luxembourg	16.21	NCV	T2	CS	56	56	NO	NO	T1, T2, T3	CS, D, PS	56	T1, T2	CS, D	56	56	56	56	T1, T2	CS, D	NO
Malta	34.70	NCV	T2	CS	55	55	NO	NO	T1	D	NO	T1	D		NO	NO	NO	T1	D	NO
Monaco	15.66	NCV	T1, T2	CS, D	56	56	NO	NO	T2	CS	56	T1, T2	CS, D	57	57	56	NO			NO
Netherlands	41.08	NCV	CS, T2	CS, D	57	56	56	61	T2	CS, D	56	T1, T2	CS, D	56	56	56	56	T2	CS	NO
New Zealand	9.14	GCV	T2	CS	52	52	54	54	T2	CS	54	T2	CS	54	54	54	54			NO
Norway	23.95	NCV	T1, T2, T3	CS, PS	60	57	NO	60	T1, T2, T3	CS, PS	57	T1, T2	CS, PS	56	56	56	56	T2	CS	NO
Poland	8.36	NCV	T1, T2	CS, D	55	55	55	55	T1, T2	CS, D	55	T1, T2	CS, D	55	55	55	55			IE
Portugal	20.34	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	21.33	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	T1, T2	CS, D	NO
Russian Federation	33.69	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	21.86	NCV	T2, T3	CS, PS	56	56	56	56	T2	CS	56	T1, T2	CS	56	56	56	56	T1, T2	CS, D	56
Slovenia	10.77	NCV	T1, T2	CS, D, PS	56	56	NO	56	T1, T2, T3	CS, D, PS	56	T1, T2	CS, D	56	56	56	NO	T1	D	NO
Spain	22.42	NCV	T1, T2, T3	CS, D, OTH, PS	56	56	56	56	CR, T1, T2, T3	CR, CS, D, PS	56	CR, T1, T2, T3	CR, CS, D, OTH	56	56	56	56	CR, T1, T2	CS, D	IE, NO
Sweden	2.49	NCV	T2	CS	54	C, NO	C, NO	IE, NO	T1, T2	CS	56	T1, T2	CS	56	56	56	56			NO
Switzerland	15.02	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	
Türkiye	17.06	NCV	T2, T3	CS, D, PS	54	54	56	NO	T1, T2	CS, D	56	T1, T2	CS, D	56	56	56	56			
Ukraine	17.09	NCV	T1, T2, T3	CS, D	56	56	56	58	T1, T2	CS, D	56	T1, T2	CS, D	56	56	56	56	T1	D	
United Kingdom of Great Britain and Northern Ireland (KP)	36.19	NCV	T1, T2	CS, D	58	57	56	61	T1, T2, T3	CS, D	56	T1, T2, T3	CS, D	56	56	56	56	T1	CS	IE, NO
United Kingdom of Great Britain and Northern Ireland (Convention)	36.11	NCV	T1, T2	CS, D	58	57	56	61	T1, T2, T3	CS, D	56	T1, T2, T3	CS, D	56	56	56	56	T1	CS	IE, NO
United States of America	27.64	GCV	T2	CS	50	50	52	52	T2	CS	52	T2	CS, D	50	50	50	52	CS, T2	CS	21

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, Cyprus, Czechia, Denmark (Convention), Denmark (KP), European Union (Convention), European Union (KP), Finland, Japan, Latvia, Netherlands, Portugal, Slovakia 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 (2020)

	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	0.02	GCV	T2	CS, PS	47	NO	47	NO	T2	CS	NO	T2, T3	CS	NA, NO	NO	NO	NA, NO	T1, T2	CS	NO
Austria	2.46	NCV	T1, T2	CS, D	45	45	NO	NO	T1, T2, T3	CS, D	68	D, T1, T2, T3	CS, D	74	67	75	75	T1, T2	CS, D	NO
Belarus	0.00	NCV	T1, T2	CS, D	NO	NO	NO	NO	T1, T2	CS, D	NO	T1, T2	CS, D	NO	NO	NO	NO	T1, T2	CS, D	NO
Belgium	2.75	NCV	CS, T1, T3	D, PS	109	107	139	NO	CS, T1, T3	D, PS	81	CS, T1, T3	D	66	66	NO	NO	CS, T1, T3	D	NO
Bulgaria	0.45	NCV	T1, T2	CS, D	NO	NO	NO	NO	T1, T2	CS, D	89	T1, T2	CS, D	NO	NO	NO	NO	T1	D	NO
Canada	0.10	GCV	T2	CS	NO	NO	NO	NO	M, T1, T2, T3	CS	78	M, T1, T2, T3	CS	102	102	NO	NO	M, T2, T3	CS	NO
Croatia	0.98	NCV	T1, T2	CS, D	NO	NO	NO	NO	T1	D	143	T1	D	NO	NO	NO	NO			NO
Cyprus	1.67	NCV	CS, T1	CS, D	NO	NO	NO	NO	CS, T1	CS, D	102	T1	D	NO	NO	NO	NO	T1	D	NO
Czechia	0.75	NCV	T1, T2	CS, D	92	92	NO	NO	T1, T2	CS, D	82	T1, T2	CS, D	NO	NO	NO	NO	T1	D	NO
Denmark (KP)	4.44	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)	4.30	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	1.82	NCV	T1, T2, T3	CS, D, PS	60	60	NO	NO	T1, T2, T3	CS, D, PS	79	T1, T2	CS, D	NO	NO	NO	NO			NO
European Union (KP)	2.01				83	85	65	143			78			95	95	78	104			72
European Union (Convention)	2.01				83	85	65	143			78			95	95	78	104			72
Finland	2.11	NCV	T3	CS, D, PS	73	73	NO	NO	T3	CS, D, PS	86	T1, T2, T3	CS, D	NO	NO	NO	NO	T2	CS	NO
France (KP)	2.29	NCV	T2, T3	CS, PS	122	122	55	NO	T2, T3	CS, PS	64	T1, T2	CS, D	74	75	73	74			72
France (Convention)	2.26	NCV	T2, T3	CS, PS	122	122	55	NO	T2, T3	CS, PS	64	T1, T2	CS, D	74	75	73	74			72
Germany	2.91	NCV	CS	CS	85	85	NO	NO	CS, T1	CS, D	76	CS, T1, T2, T3	CS, D	NO	NO	NO	NO	CS, D, M	CS, D	NO
Greece	0.25	NCV	T1, T2	D, PS	NO	NO	NO	NO	T1, T2	CS, D, PS	87	T1, T2	CS, D	IE, NO	IE, NO	IE, NO	IE, NO	T1	D	NO
Hungary	1.13	NCV	T1, T2, T3	CS, D, PS	100	94	NE	NO	T1, T2, T3	CS, D, PS	67	T1, T2	CS, D	97	97	NO	NO	T2	CS	
Iceland	0.02	NCV	T1	D	NO	NO	NO	NO	T1	D	73	T1, T2	CS, D	NO	NO	NO	NO	T1	D	NO
Ireland	1.35	NCV	T1, T3	CS, D, PS	153	153	NO	NO	T1, T2, T3	CS, D, PS	82	T1, T2	CS, D	NO	NO	NO	NO			IE, NO
Italy	1.69	NCV	T3	CS	94	94	NO	NO	T2	CS	80	T2	CS	96	96	NO	NO	T2	CS	NO
Japan	1.65	GCV	CS, T2	CS	47	IE, NO	47	47	CS, T2	CS	44	CS, T2	CS	32	32	NO	NO			NO
Kazakhstan	0.00	NCV	T1	D	NA	NA	NA	NA	T1	D	NA	T1	D	NA, NO	NA	NA	NA, NO	T1	D	NA
Latvia	1.34	NCV	T1, T2	CS, D	NO	NO	NO	NO	T1, T2	CS, D, PS	86	T1, T2	CS, D	73	73	NO	73	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	1.54	NCV	T1, T2, T3	CS, D, PS	124	124	NO	NO	T1, T2	CS, D, OTH	117	T2	CS	NO	NO	NO	NO	T2	CS	NO
Luxembourg	2.29	NCV	T2	CS	99	99	NO	NO	T1, T2, T3	CS, D, PS	80	T1, T2	CS, D	73	NO	NO	73	T1, T2	CS, D	NO
Malta	0.00	NCV	T2	CS	NO	NO	NO	NO	T1	D	NO	T1	D	NO	NO	NO	NO	T1	D	NO
Monaco	24.76	NCV	T1, T2	CS, D	71	71	NO	NO	T2	CS	75	T1, T2	CS, D	75	NO	75	NO			NO
Netherlands	1.65	NCV	CS, T2	CS, D	81	81	NO	NO	T2	CS, D	NO	T1, T2	CS, D	77	76.81	NO	77	T2	CS	NO
New Zealand	0.00	GCV	T2	CS	NO	NO	NO	NO	T2	CS	NO	T2	CS	1.4	NO	1.4	NO			NO
Norway	2.16	NCV	T1, T2, T3	CS, PS	52	52	NO	NO	T1, T2, T3	CS, PS	60	T1, T2	CS, PS	74	74		NO	T2	CS	NO
Poland	1.47	NCV	T1, T2	CS, D	98	98	NO	143	T1, T2	CS, D	132	T1, T2	CS, D	98	98	IE, NO	NO			IE
Portugal	1.37	NCV	T1, T2, T3	CR, D, PS	119	119	NO	NO	T1, T2, T3	CR, D, PS	54	T1, T2	CS, D	NO	NO	NO	NO	T1	D	NO
Romania	0.94	NCV	T1, T2, T3	CS, D, PS	NO	NO	NO	NO	T1, T2, T3	CS, D, PS	87	T1, T2	CS, D	92	92	NO	NO	T1, T2	CS, D	NO
Russian Federation	2.13	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	1.35	NCV	T2, T3	CS, PS	81	81	NO	NO	T2	CS	98	T1, T2	CS	NO	NO	NO	NO	T1, T2	CS, D	NO
Slovenia	0.93	NCV	T1, T2	CS, D, PS	92	92	NO	NO	T1, T2, T3	CS, D, PS	61	T1, T2	CS, D	NO	NO	NO	NO	T1	D	NO
Spain	0.80	NCV	T1, T2, T3	CS, D, OTH, PS	67	69	43	NO	CR, T1, T2, T3	CR, CS, D, PS	49	CR, T1, T2, T3	CR, CS, D, OTH	NO	NO	NO	NO	CR, T1, T2	CS, D	NO
Sweden	6.91	NCV	T2	CS	94	94	NO	NO	T1, T2	CS	72	T1, T2	CS	75	75	75	76			NO
Switzerland	6.73	NCV	T2, T3	CS	89	89	NO		T2, T3	CS, PS	65	T1, T2, T3	CS, D	NO			NO	T2, T3	CS	NA
Türkiye	0.38	NCV	T2, T3	CS, D, PS	120	120	NO	NO	T1, T2	CS, D	139	T1, T2	CS, D	NO	NO		NO			
Ukraine	1.22	NCV	T1, T2, T3	CS, D	73	73	NA, NO	73	T1, T2	CS, D	73	T1, T2	CS, D	73	73	73	73	T1	D	NA
United Kingdom of Great Britain and Northern Ireland (KP)	1.70	NCV	T1, T2	CS, D	62	62	NO	NO	T1, T2, T3	CS, D	49	T1, T2, T3	CS, D	NO	NO	NO	NO	T1	CS	IE, NO
United Kingdom of Great Britain and Northern Ireland (Convention)	1.70	NCV	T1, T2	CS, D	62	62	NO	NO	T1, T2, T3	CS, D	49	T1, T2, T3	CS, D	NO	NO	NO	NO	T1	CS	IE, NO
United States of America	0.23	GCV	T2	CS	6.8	6.8	NO	NO	T2	CS	NO	T2	CS, D	NO	NO	NO	NO	CS, T2	CS	43

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, Cyprus, Czechia, Denmark (Convention), Denmark (KP), European Union (Convention), European Union (KP), Finland, Japan, Latvia, Netherlands, Portugal, Slovakia 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 (2020)

	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	14.92	T2	CS, D	GCV	67	70	0.16	T1, T3	CS, D	GCV	3.5	1.6
Austria	27.60	T1, T2	CS, D	NCV	75	74	0.32	T3	CS	NCV	0.48	3.3
Belarus	10.74	T2	CS	NCV	72	74	0.16	T1	D	NCV	3.2	3.9
Belgium	19.30	M, T2	CS, M	NCV	72	74	0.22	M, T3	CS, M	NCV	0.47	3.1
Bulgaria	18.52	T1, T2	CR, D	NCV	74	76	0.18	T2	CR	NCV	1.5	2.4
Canada	19.13	M, T1, T3	CS	GCV	69	70	0.33	M, T1, T3	CS	GCV	3.9	3.9
Croatia	23.35	T1	D	NCV, NO	69	74	0.23	T1, T3	CR, D	NCV	1.4	2.8
Cyprus	21.39	T1, T2	D, M	NCV	72	75	0.24	T1, T2	D, M	NCV	1.2	3.8
Czechia	15.19	T2	M	NCV	70	73	0.15	T3	M	NCV	0.82	2.8
Denmark (KP)	26.69	CR, M, T2	CS	NCV	73	74	0.30	CR, M, T3	CR	NCV	0.64	3.5
Denmark (Convention)	25.84	CR, M, T1, T2	CS, D	NCV	73	74	0.29	CR, M, T1, T3	CR, D	NCV	0.67	3.5
Estonia	18.61	T1, T2	CS, D	NCV	70	73	0.18	T3	CS	NCV	0.94	3.0
European Union (KP)	20.80				73	74	0.22				0.77	3.1
European Union (Convention)	20.81				73	74	0.22				0.77	3.1
Finland	20.60	T2	CS	NCV	71	73	0.17	T3	CR	NCV	0.74	2.4
France (KP)	26.27	T3	M	NCV	72	75	0.28	T3	M	NCV	0.95	2.8
France (Convention)	26.09	T3	M	NCV	74	75	0.28	T3	M	NCV	0.98	2.9
Germany	19.39	CS, M, T2, T3	CS, D	NCV	75	74	0.23	CS, M, T2, T3	CS, M	NCV	0.48	3.9
Greece	17.63	T1, T2, T3	CS, D	NCV	73	73	0.14	M, T1, T2	D, M	NCV	1.7	2.1
Hungary	19.39	T1, T2	CS, D	NCV	71	74	0.20	T1, T3	D, M	NCV	1.2	3.0
Iceland	18.12	T1, T2	CS, D	NCV	71	74	0.16	T3	D	NCV	0.74	2.7
Ireland	16.62	T2, T3	CS, M	NCV	69	73	0.18	T3	M	NCV	0.66	3.0
Italy	20.42	T2	CS, M	NCV	72	74	0.19	T3	M	NCV	0.97	2.7
Japan	14.07	T2	CS	GCV	68	69	0.11	T3	CS, D	GCV	0.97	3.2
Kazakhstan	4.58	T1	D	NCV	69	74	0.07	T1	D	NCV	3.2	5.2
Latvia	28.48	T1, T2	CS, D	NCV	71	75	0.25	T1, T3	CR, D, M	NCV	0.80	2.4
Liechtenstein	29.03	T2	CS	NCV	74	73	0.27	T2	CS, D	NCV	0.70	3.4
Lithuania	29.01	T1, T2	CS, D	NCV, NO	70	73	0.26	T1, T3	CR, D	NCV	0.64	2.4
Luxembourg	50.89	T1, T2	CS, D	NCV	73	74	0.59	T3	M	NCV	0.39	3.1
Malta	24.94	T1, T2	CS, D, M	NCV	69	74	0.16	T3	M	NCV	0.88	1.8
Monaco	24.37	T2	CS	NCV	72	75	0.44	T2	CS, D	NCV	3.9	3.9
Netherlands	15.32	T1, T2	CS	NCV	73	72	0.14	T1, T2	CS	NCV	0.75	3.0
New Zealand	15.17	T2	CS	GCV	67	69	0.08	T3	CS	GCV	1.5	0.86
Norway	16.72	T2	CS	NCV, NO	71	74	0.19	T2	CS	NCV	0.46	2.8
Poland	16.32	T2	D	NCV, NO	72	74	0.17	T3	D	NCV	0.95	2.9
Portugal	24.63	T2	OTH	NCV	72	74	0.24	OTH, T3	CR, OTH	NCV	1.4	2.4
Romania	15.92	T1, T3	D, OTH	NCV	72	87	0.19	T1, T3	D, OTH	NCV	1.6	3.3
Russian Federation	7.43	T1, T2	CS, D	NCV	73	74	0.05	T1, T2, T3	CS, D	NCV	1.5	2.1
Slovakia	18.20	T2	CS, D	NCV	70	74	0.18	T3	D	NCV	0.81	2.6
Slovenia	28.41	M	M	NCV	71	74	0.33	M	M	NCV	0.76	3.2
Spain	25.16	CR	CR, CS	NCV	75	74	0.28	CR	CR	NCV	0.88	3.3
Sweden	30.12	T2	CS		72	72	0.37	M, T1, T2	CS, D		0.33	4.7
Switzerland	30.38	T2	CS	NCV	74	73	0.28	T3	CS	NCV	0.70	3.4
Türkiye	14.32	T1, T2	CS, D	NCV	69	72	0.23	T1	D	NCV	8.0	3.9
Ukraine	7.17	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)	21.96	OTH, T1, T3	CS, OTH	NCV	70	74	0.22	T3	CR, CS	NCV	0.61	3.3
United Kingdom of Great Britain and Northern Ireland (Convention)	21.92	OTH, T1, T3	CS, OTH	NCV	70	74	0.22	T3	CR, CS	NCV	0.61	3.3
United States of America	22.30	CS, T1, T2	CS	GCV	67	70	0.16	M, T1, T2	CS, D, M	GCV	1.5	2.0

[a] The national total includes indirect CO_2 emissions from the atmospheric oxidation of CH_4, CO and NMVOCs for the following Parties: Canada, Cyprus, Czechia, Denmark (Convention), Denmark (KP), European Union (Convention), European Union (KP), Finland, Japan, Latvia, Netherlands, Portugal, Slovakia 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 (2020)

	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	1.26	70	67	0.36	74	70
Austria	T1, T2, T3	CS, D	0.03	73	74	0.03	NO	74
Belarus	T1, T2	CS, D	0.06	72	IE	0.00	NO	74
Belgium	T1, T3	CS, D	0.01	72	72	0.35	IE	73
Bulgaria	T1, T2	D	0.02	72	69	0.01	NO	74
Canada	M, T2, T3	CS	0.68	68	69	0.57	74	70
Croatia	T1	D	0.07	72	70	0.54	NO	74
Cyprus	T1	D	0.00	72	NO	0.01	NO	74
Czechia	T1, T2	D, M	0.01	73	70	0.01	NO	74
Denmark (KP)	CR, M, T2	CS	0.19	72	73	1.14	78	74
Denmark (Convention)	CR, M, T1, T2	CS, D	0.24	72	73	1.28	78	74
Estonia	T2	CS, D	0.03	NO	71	0.17	NO	73
European Union (KP)			0.23	73	70	0.53	78	74
European Union (Convention)			0.23	73	70	0.53	78	74
Finland	T1, T2	CS	0.18	73	71	0.73	78	73
France (KP)	T1, T3	CS, M	0.78	73	70	0.32	78	75
France (Convention)	T1, T3	CS, M	0.78	73	70	0.35	78	75
Germany	CS, T1, T2	CS, D, M	0.14	73	70	0.19	80	74
Greece	T1, T2, T3	CS, D	0.29	71	69	2.23	78	77
Hungary	T1, T2	CS, D	0.01	73	70	0.02	NO	74
Iceland	T1, T2	CS, D	0.29	72	70	0.55	NO	74
Ireland	M, T2, T3	CS	0.02	71	71	0.55	NO	73
Italy	T1, T2	CS	0.31	72	70	1.21	77	74
Japan	T2	CS	0.46	68	68	0.88	IE	69
Kazakhstan	T1, T2	CS, D	0.03	72	69	0.00	NO	74
Latvia	T1, T2	CS, D	0.01	72	70	0.07	NO	75
Liechtenstein	T1	CS	0.03	73	NO		NO	NO
Lithuania	T1	CS	0.01	72	71	0.06	NO	73
Luxembourg	T1, T2	CS, D	0.01	NO	70	0.00	NO	74
Malta	D, T1	CS, D	0.01	72	70	1.73	NO	74
Monaco	T1, T2	CS, D	0.65	72	NO	1.37	NO	75
Netherlands	T1, T2	CS, D	0.01	72	72	0.42	NO	72
New Zealand	T2	CS	0.89	68	66	0.34	73	NO
Norway	T1, T2	CS, D, PS	1.45	73	71	5.54	NO	74
Poland	T1	D	0.02	72	70	0.00	NO	74
Portugal	T1, T2, T3	D	0.45	71	70	0.35	77	74
Romania	T1, T2	CS, D, OTH	0.11	72	70	0.12	NO	80
Russian Federation	T1, T1b	D	0.05	72	IE	0.07	77	74
Slovakia	T1, T3	CS, D	0.00	73	69	0.01	NO	74
Slovenia	T1	D	0.01	72	70	0.00	NO	74
Spain	T1, T3	D	0.55	73	71	0.89	77	74
Sweden	T1, T2	CS, D	0.42	71	70	1.35	78	73
Switzerland	T2, T3	CS	0.18	73	IE	0.25	NO	73
Türkiye	T2	CS, D	0.41	71	IE	0.24	77	72
Ukraine	T1, T2, T3	CS, D, OTH	0.05	71	70	0.03	NO	74
United Kingdom of Great Britain and Northern Ireland (KP)	T2, T3	CS	0.16	72	70	1.18	76	75
United Kingdom of Great Britain and Northern Ireland (Convention)	T2, T3	CS	0.17	72	70	1.18	76	75
United States of America	T1, T2	CS	1.85	68	66	0.40	71	68

[a] The national total includes indirect CO_2 emissions from the atmospheric oxidation of CH_4, CO and NMVOCs for the following Parties: Canada, Cyprus, Czechia, Denmark (Convention), Denmark (KP), European Union (Convention), European Union (KP), Finland, Japan, Latvia, Netherlands, Portugal, Slovakia 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 (2020)

	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	93 340	97 482	4.44	1 996	1 905	-4.57	168 935	162 018	-4.09	NO	0	–	264 271	261 405	-1.08
Austria	242	1 211	400.68	76	81	5.32	14 381	12 632	-12.16	NO	0	–	14 700	13 924	-5.28
Belarus	701	646	-7.84	IE	0	–	4 657	4 566	-1.94	NO	0	–	5 358	5 213	-2.71
Belgium	107	52	-51.64	18	22	20.04	50 439	48 917	-3.02	0.89	0	–	50 565	48 990	-3.11
Bulgaria	162	349	115.23	7	6.7	-0.03	5 830	5 830	0.00	NO	0	–	5 998	6 185	3.11
Canada	65 130	141 293	116.94	1 742	1 344	-22.84	96 559	14 406	-85.08	21	0	–	163 451	157 043	-3.92
Croatia	215	215	0.00	18	18	0.00	2 260	2 260	0.00	NO	0	–	2 493	2 493	0.00
Cyprus	1.3	53	3903.33	NO	0	–	4 568	3 985	-12.76	NO	0	–	4 570	4 039	-11.62
Czechia	62	1 634	2524.51	84	88	5.33	4 787	4 730	-1.20	4.0	0	–	4 937	6 452	30.68
Denmark (KP)	1 039		–	44		–	13 562		–	NO		–	14 645	0	–
Denmark (Convention)	1 425	662	-53.55	47	44	-5.82	13 565	13 771	1.52	NO	0	–	15 037	14 477	-3.72
Estonia	NO	50	–	50	0	–	1 005	1 005	0.00	NO	0	–	1 055	1 055	0.00
European Union (KP)	116 468	136 501	17.20	1 929	1 593	-17.43	968 054	896 593	-7.38	164	375	129.12	1 086 615	1 035 062	-4.74
European Union (Convention)	115 274	141 027	22.34	1 918	1 952	1.79	964 098	948 505	-1.62	164	376	129.78	1 081 454	1 091 861	0.96
Finland	1 148	1 161	1.10	27	44	60.62	11 873	11 782	-0.77	NO	0	–	13 049	12 987	-0.48
France (KP)	41 023		–	516		–	109 404		–	81		–	151 025	0	–
France (Convention)	41 674	42 645	2.33	516	655	26.73	111 284	109 958	-1.19	81	0	–	153 556	153 258	-0.19
Germany	13 980	12 255	-12.34	195	220	12.98	185 951	191 522	3.00	13	0	–	200 139	203 997	1.93
Greece	2 905	3 707	27.60	86	85	-1.78	18 516	14 867	-19.71	13	13	-1.79	21 521	18 673	-13.24
Hungary	16	0	–	43	44	1.73	4 250	4 214	-0.85	1.0	0	–	4 310	4 258	-1.22
Iceland	175	171	-2.50	9	11	23.25	3 655	3 564	-2.49	NO	0	–	3 839	3 746	-2.44
Ireland	164	76	-53.32	23	0	–	16 495	16 167	-1.99	NO	0	–	16 682	16 243	-2.63
Italy	16 553	14 302	-13.60	160	109	-31.88	52 978	62 590	18.14	NO	0	–	69 692	77 001	10.49
Japan	76 782	73 790	-3.90	78	77	-0.85	122 086	117 328	-3.90	NO	0	–	198 945	191 195	-3.90
Kazakhstan	888	0	–	688	22	-96.86	5 171	8 968	73.44	NO	0	–	6 747	8 990	33.24
Latvia	13	10	-19.29	8.0	6.9	-14.22	2 443	2 422	-0.87	NO	0	–	2 464	2 439	-1.01
Liechtenstein	0.81		–	NO		–	13		–	NO		–	14	0	–
Lithuania	9.0	8.6	-4.45	18	18	-2.21	2 268	2 253	-0.65	NO	0	–	2 295	2 279	-0.68
Luxembourg	NO	0	–	7.1	8.2	16.06	22 887	22 831	-0.24	0.78	0	–	22 895	22 840	-0.24
Malta	1	27	2054.34	0.84	0.84	0.00	2 774	2 478	-10.66	0.30	0.40	34.02	2 777	2 507	-9.71
Monaco	6.3		–	NO		–	15		–	NO		–	21	0	–
Netherlands	298	295	-1.15	37	37	0.00	92 747	91 677	-1.15	NO	0	–	93 082	92 008	-1.15
New Zealand	9 974	9 541	-4.33	341	321	-5.72	23 004	22 133	-3.78	NO	0	–	33 318	31 996	-3.97
Norway	9 675	9 652	-0.23	89	89	0.21	7 257	7 240	-0.23	0	0	–	17 021	16 982	-0.23
Poland	873	605	-30.67	158	158	-0.02	18 871	19 139	1.42	NO	0.93	–	19 902	19 904	0.01
Portugal	3 584	3 595	0.29	15	47	225.25	21 911	21 901	-0.04	33	0	–	25 542	25 543	0.00
Romania	1 572	1 572	0.00	46	0	–	1 981	1 981	0.00	NO	0	–	3 599	3 553	-1.28
Russian Federation	13 514		–	IE		–	11 898		–	NO		–	25 411	0	–
Slovakia	11	0	–	1.6	0		750	1 204	60.45	1.2	0	–	764	1 204	57.65
Slovenia	3.3	0	–	19	19	1.06	363	411	13.28	NO	0	–	385	430	11.71
Spain	20 652	39 001	88.84	141	176	24.78	88 083	64 328	-26.97	15	0	–	108 891	103 505	-4.95
Sweden	2 691	2 537	-5.74	38	38	1.33	12 983	14 339	10.44	NO	0	–	15 712	16 914	7.65
Switzerland	1 080	1 781	64.87	IE	127	–	28 170	28 579	1.45	IE	0	–	29 250	30 488	4.23
Türkiye	30 233	29 166	-3.53	IE	0	–	81 712	78 785	-3.58	NO	0	–	111 945	107 951	-3.57
Ukraine	852	0	–	1 432	0	–	9 616	0		NO	0	–	11 901	0	–
United Kingdom of Great Britain and Northern Ireland (KP)	8 965		–	83		–	200 037		–	NO		–	209 086	0	–
United Kingdom of Great Britain and Northern Ireland (Convention)	9 509	15 002	57.76	83	27	-67.26	199 975	199 310	-0.33	NO	362	–	209 567	214 701	2.45
United States of America	1 594 245	1 548 022	-2.90	21 290	19 415	-8.81	594 699	663 438	11.56	NA	0	–	2 210 234	2 230 875	0.93

[a] Based on IEA data from the IEA (2022) World energy balances data service, www.iea.org/data-and-statistics as of 11 May 2022.

[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 Australia excludes the overseas territories.
IEA data for France includes Monaco and excludes the overseas territories: New Caledonia; French Polynesia; Saint Barthélemy; Saint Martin; Saint Pierre and Miquelon; and Wallis and Futuna. Energy data for the following overseas departments: Guadeloupe; French Guiana; Martinique; Mayotte; and Réunion are included for the years from 2011 onwards and excluded for earlier years.
IEA data for Italy includes San Marino and the Holy See.
IEA data for Japan includes Okinawa.
No IEA data for Lichtenstein are available. Only the oil data are included in the data for Switzerland.
IEA data for Netherlands excludes Suriname, Aruba and the other former Netherland Antilles (Bonaire, Curaçao, Saba, Saint Eustatius and Sint Maarten).
IEA data for Portugal includes the Azores and Madeira.
No IEA data for Russian Federation are available for 2020 as of 11 May 2022.
IEA data for Spain includes the Canary Islands.

Table 1.9

Domestic and international navigation - activity data (2020)

	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	5 402	5 364	-0.70	10 677	13 452	25.99	24 609	24 437	-0.70	4 570	4 269	-6.58	30 011	29 801	-0.70	15 247	17 722	16.23
Austria	NO	0	–	222	1 143	414.64	NO	0	–	572	575	0.54	NO	0	–	794	1 718	116.40
Belarus	NO	0	–	30	43	42.25	NO	0	–	NO	0	–	NO	0	–	30	43	42.25
Belgium	IE	24	–	5 053	7 532	49.06	208 993	206 924	-0.99	57 865	57 327	-0.93	208 993	206 948	-0.98	62 918	64 859	3.08
Bulgaria	NO	0	–	65	0	–	633	633	0.00	2 867	2 890	0.78	633	633	0.00	2 933	2 890	-1.47
Canada	5 104	17 849	249.68	49 038	31 865	-35.02	33 370	13 909	-58.32	68 888	5 282	-92.33	38 474	31 758	-17.46	117 926	37 147	-68.50
Croatia	NO	0	–	1 717	1 717	0.00	161	161	0.00	692	692	0.00	161	161	0.00	2 409	2 409	0.00
Cyprus	NO	0	–	17	17	-0.42	6 395	6 439	0.68	5 121	5 100	-0.42	6 395	6 439	0.68	5 139	5 117	-0.42
Czechia	NO	0	–	172	170	-0.83	NO	0	–	NO	0	–	NO	0	–	172	170	-0.83
Denmark (KP)	1 701		–	4 598		–	7 511		–	13 974		–	9 211	0	–	18 572	0	–
Denmark (Convention)	1 701	424	-75.10	5 591	4 471	-20.03	7 619	8 641	13.41	15 554	14 385	-7.51	9 320	9 064	-2.75	21 145	18 856	-10.82
Estonia	NO	0	–	271	273	0.71	6 554	6 680	1.92	4 822	4 856	0.71	6 554	6 680	1.92	5 093	5 129	0.71
European Union (KP)	68 642	47 369	-30.99	167 088	104 376	-37.53	1 229 798	1 089 528	-11.41	451 954	423 403	-6.32	1 298 439	1 136 896	-12.44	619 042	527 779	-14.74
European Union (Convention)	68 565	47 369	-30.91	166 281	109 244	-34.30	1 229 807	1 190 426	-3.20	451 096	476 835	5.71	1 298 372	1 237 794	-4.67	617 377	586 079	-5.07
Finland	237	240	1.35	2 496	2 769	10.96	9 671	9 680	0.10	2 987	3 067	2.70	9 907	9 920	0.13	5 482	5 836	6.46
France (KP)	776		–	5 026		–	32 941		–	7 484		–	33 717	0	-100.00	12 511	0	–
France (Convention)	776	329	-57.53	6 726	6 468	-3.84	34 509	33 436	-3.11	7 534	6 493	-13.82	35 285	33 765	-4.31	14 261	12 961	-9.11
Germany	368.2	0	–	18 417	11 246	-38.93	32 253	32 360	0.33	13 896	22 663	63.09	32 621	32 360	-0.80	32 314	33 910	4.94
Greece	12 469	12 209	-2.08	9 002	9 326	3.60	54 326	53 246	-1.99	14 068	14 573	3.59	66 795	65 455	-2.01	23 070	23 899	3.59
Hungary	NO	0	–	128	128	-0.37	NE	0	–	NE	0	–	NO	0	–	128	128	-0.37
Iceland	NO	0	–	335	334	-0.46	NO	0	–	1 039	1 034	-0.47	NO	0	–	1 374	1 368	-0.47
Ireland	NO	0	–	4 356	4 285	-1.64	434	421	-2.99	6 054	5 955	-1.64	434	421	-2.99	10 410	10 240	-1.64
Italy	27 473	15 241	-44.52	29 923	8 087	-72.98	69 673	76 995	10.51	2 299	24 056	946.16	97 145	92 236	-5.05	32 222	32 143	-0.25
Japan	IE	83 958	–	5 698	42 836	651.79	IE	201 500	–	629	2 532	302.49	IE	285 458	–	6 327	45 368	617.06
Kazakhstan	NO	0	–	38	0	–	76	0	–	68	12	-81.78	76	0	–	106	12	-88.28
Latvia	NO	0	–	94	95	0.70	128	126	-1.31	8 541	8 563	0.26	128	126	-1.31	8 635	8 658	0.26
Liechtenstein	NO		–	NO		–	NO		–	NO		–	NO	0	–	NO	0	–
Lithuania	NO	0	–	159	158	-0.87	4 438	4 432	-0.14	3 206	3 182	-0.74	4 438	4 432	-0.14	3 365	3 340	-0.75
Luxembourg	NO	0	–	5.0	3.6	-27.76	NO	0	–	0.17	0	–	NO	0	–	5.1	3.6	-30.11
Malta	NO	0	–	484	514	6.20	74 559	74 559	0.00	16 956	16 956	0.00	74 559	74 559	0.00	17 440	17 470	0.17
Monaco	NO		–	10		–	NO		–	104		–	NO	0	–	115	0	-100.00
Netherlands	NO	0	–	8 661	8 682	0.24	399 390	389 581	-2.46	79 455	77 734	-2.17	399 390	389 581	-2.46	88 117	86 415	-1.93
New Zealand	3 715	1 498	-59.67	NO	2 149	–	2 419	2 414	-0.21	5 373	5 003	-6.89	6 135	3 913	-36.22	5 373	7 153	33.12
Norway	NO	0	–	34 716	35 403	1.98	902	889	-1.48	10 327	9 553	-7.49	902	889	-1.48	45 043	44 956	-0.19
Poland	NO	0	–	207	43	-79.28	3 527	3 456	-2.01	9 095	9 011	-0.93	3 527	3 456	-2.01	9 302	9 054	-2.67
Portugal	1 881	1 881	0.00	757	1 129	49.23	22 642	22 713	0.31	5 951	5 951	0.00	24 523	24 594	0.29	6 707	7 080	5.56
Romania	NO	0	–	1 675	1 753	4.63	NO	0	–	1 725	1 805	4.63	NO	0	–	3 400	3 557	4.63
Russian Federation	7 986		–	10 709		–	261 673		–	44 272		–	269 659	0	–	54 981	0	-100.00
Slovakia	NO	0	–	72	0	–	NO	0	–	200	0	–	NO	0	–	273	0	-100.00
Slovenia	NO	0	–	0.99	0	–	4 526	4 412	-2.53	NO	378	–	4 526	4 412	-2.53	1.0	378	38069.46
Spain	14 459	14 280	-1.23	18 008	19 000	5.51	160 583	158 600	-1.23	105 476	104 966	-0.48	175 041	172 880	-1.23	123 484	123 966	0.39
Sweden	2 843	2 618	-7.92	3 064	1 854	-39.50	77 166	75 078	-2.71	29 195	29 127	-0.23	80 010	77 696	-2.89	32 259	30 981	-3.96
Switzerland	NO	0	–	998	497	-50.13	NO	0	–	189	104	-44.95	NO	0	–	1 187	602	-49.31
Türkiye	612	565	-7.63	16 653	16 358	-1.77	11 345	10 475	-7.67	11 800	11 582	-1.84	11 956	11 040	-7.66	28 453	27 941	-1.80
Ukraine	NO	0	–	1 116	68	-93.95	NO	0	–	583	0	–	NO	0	–	1 699	68	-96.03
United Kingdom of Great Britain and Northern Ireland (KP)	6 435		–	52 101		–	53 294		–	58 412		–	59 729	0	–	110 514	0	–
United Kingdom of Great Britain and Northern Ireland (Convention)	6 435	122	-98.10	52 101	18 382	-64.72	53 294	21 852	-59.00	58 412	56 530	-3.22	59 729	21 974	-63.21	110 514	74 912	-32.21
United States of America	105 067	13 553	-87.10	237 554	114 341	-51.87	310 174	423 347	36.49	110 737	215 411	94.52	415 241	436 900	5.22	348 291	329 752	-5.32

[a] Based on IEA data from the IEA (2022) World energy balances data service, www.iea.org/data-and-statistics as of 11 May 2022.

[b] Geographical coverage of IEA data:

IEA data for Australia excludes the overseas territories.

IEA data for France includes Monaco and excludes the overseas territories: New Caledonia; French Polynesia; Saint Barthélemy; Saint Martin; Saint Pierre and Miquelon; and Wallis and Futuna. Energy data for the following overseas departments: Guadeloupe; French Guiana; Martinique; Mayotte; and Réunion are included for the years from 2011 onwards and excluded for earlier years.

IEA data for Italy includes San Marino and the Holy See.

IEA data for Japan includes Okinawa.

No IEA data for Lichtenstein are available. Only the oil data are included in the data for Switzerland.

IEA data for Netherlands excludes Suriname, Aruba and the other former Netherland Antilles (Bonaire, Curaçao, Saba, Saint Eustatius and Sint Maarten).

IEA data for Portugal includes the Azores and Madeira.

No IEA data for Russian Federation are available for 2020 as of 11 May 2022.

IEA data for Spain includes the Canary Islands.

Table 1.10

Fugitive emissions from fuels: coal mining and handling - CH_4 (2020)

	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	4.75	T2, T3	CS, PS	107	498	605	493	-18.52	5.7	0.37	0.66	IE, NA
Austria				NO	NO	NO	0	–	NO	NO	NO	NO
Belarus				NO	NO	NO	0	–	NO	NO	NO	NO
Belgium	0.04	D	D	NO	NO	NO	0	–	NO	NO	NO	NO
Bulgaria	1.36	T1, T2	CS, D	NO	22	22	22	0.00	NO	NO	0.80	0.067
Canada	0.16	CS	CS	NO	57	57	45	-21.05	NO	IE, NO	0.70	IE, NO
Croatia				NO	NO	NO	0	–	NO	NO	NO	NO
Cyprus							0	–				
Czechia	1.45	T1, T2	CS, D	2.1	29	32	32	0.20	8.1	1.7	1.3	0.067
Denmark (KP)				NO	NO	NO		–	NO	NO	NO	NO
Denmark (Convention)				NO	NE, NO	NE, NO	0	–	NO	NO	NE, NO	NE, NO
Estonia				NO	NO	NO	0	–	NO	NO	NO	NO
European Union (KP)	0.64			61	242	303	123	-59.37	7.5	1.6	0.50	0.031
European Union (Convention)	0.64			61	242	303	303	-0.11	7.5	1.6	0.50	0.031
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	0.01	T2, T3	CS	NO	107	107	107	0.00	NA, NO	NA, NO	0.011	IE, NA
Greece	0.41	T1	D	NO	14	14	14	0.00	NO	NO	0.87	IE, NO
Hungary	0.05			NO	6.1	6.1	6.1	0.00	NO	NO	0.003	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	0.57	0.48	1.0	0.75	-28.20	1.4	1.7	0.80	0.067
Kazakhstan	2.01	T1	D	10	89	99	103	4.57	17	2.7	0.80	0.067
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	NO	0	–	NO	NO	NO	NO
Monaco				NO	NO	NO		–	NO	NO	NO	NO
Netherlands				NO	NO	NO	0	–	NO	NO	NO	NO
New Zealand	0.08	T1	D	NO	5.6	5.6	2.8	-50.00	NO	NO	0.40	0.034
Norway	0.14	T2	CS	0.12	0.069	0.2	0.07	-63.60	7.2	IE, NO	0.54	IE, NO
Poland	3.83	T1, T2	D	54	46	100	100	0.00	7.8	1.7	0.80	0.067
Portugal	0.03	NO	NO	NO	NO	NO	0	–	NO	NO	NO	NO
Romania	4.97	T1, T2	D	0.43	15	15	15	0.00	12	1.7	0.80	0.067
Russian Federation	3.12	T1, T2	CS, D	103	299	402		–	12	2.0	3.7	0.13
Slovakia	0.47	T2	CS	0.98	NO	0.98	0.98	0.10	5.9	0.60	NO	NO
Slovenia	1.37	T2, T3	CS, D, PS	3.2	NO	3.2	3.2	0.00	2.0	0.67	NO	NO
Spain	0.01	CS, T2	CS	NO	NO	NO	0	–	NO	NO	NO	NO
Sweden				NO	NO	NO	0	–	NO	NO	NO	NO
Switzerland				NO	NO	NO	0	–	NO	NO	NO	NO
Türkiye	1.06	T1	D	11	63	75	75	0.00	12	1.7	0.80	0.067
Ukraine	3.38	T1, T3	CS, D	39	C	C	24	–	11	1.2	C	C
United Kingdom of Great Britain and Northern Ireland (KP)	0.12	T2, T3	CS	0.11	2.0	2.1		–	13	1.2	0.34	IE, NO
United Kingdom of Great Britain and Northern Ireland (Convention)	0.12	T2, T3	CS	0.11	2.0	2.1	1.7	-18.97	13	1.2	0.34	IE, NO
United States of America	0.79	T2, T3	CS	177	308	485	485	0.00	11	0.87	0.63	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, Cyprus, Czechia, Denmark (Convention), Denmark (KP), European Union (Convention), European Union (KP), Finland, Japan, Latvia, Netherlands, Portugal, Slovakia and Switzerland.

[b] Based on IEA data from the IEA (2022) World energy balances data service, www.iea.org/data-and-statistics as of 11 May 2022.

[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).

[d] Geographical coverage of IEA data:
IEA data for Australia excludes the overseas territories.
IEA data for France includes Monaco and excludes the overseas territories: New Caledonia; French Polynesia; Saint Barthélemy; Saint Martin; Saint Pierre and Miquelon; and Wallis and Futuna. Energy data for the following overseas departments:
IEA data for Italy includes San Marino and the Holy See.
IEA data for Japan includes Okinawa.
No IEA data for Lichtenstein are available. Only the oil data are included in the data for Switzerland.
IEA data for Netherlands excludes Suriname, Aruba and the other former Netherland Antilles (Bonaire, Curaçao, Saba, Saint Eustatius and Sint Maarten).
IEA data for Portugal includes the Azores and Madeira.
No IEA data for Russian Federation are available for 2020 as of 11 May 2022.
IEA data for Spain includes the Canary Islands.

Table 1.11a

Fugitive emissions from fuels: oil and natural gas - CH_4, CO_2 (2020)

	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	1.35	T1, T2	CS, D, PS	2.82	T1, T2	CS, D, PS
Austria	0.30	T1, T2	CS, D	0.15	T1, T2	CS, D
Belarus	3.21	CS, T1	CS, D	0.01	T1	D
Belgium	0.44	CS, D	CS, D	0.10	T1	D
Bulgaria	0.54	T1	D	1.35	T1	D
Canada	4.83	CS	CS	2.39	CS	CS
Croatia	0.65	T1	D	1.21	CS, T1	CS, D
Cyprus	–			–		
Czechia	0.54	T1, T2	CS, D	0.00	T1, T2	CS, D
Denmark (KP)	0.13	T2, T3	CS, D, OTH, PS	0.30	T2, T3	CS, D, PS
Denmark (Convention)	0.12	T2, T3	CS, D, OTH, PS	0.29	T2, T3	CS, D, PS
Estonia	0.16	T1	D	0.00	T1	D
European Union (KP)	0.62			0.46		
European Union (Convention)	0.62			0.46		
Finland	0.05	T1, T2	CS, D, PS	0.16		
France (KP)	0.21	T1, T2, T3	CS, D, PS	0.56	T1, T2, T3	CS, D, PS
France (Convention)	0.21	T1, T2, T3	CS, D, PS	0.55	T1, T2, T3	CS, D, PS
Germany	0.66	T2, T3	CS	0.16	CS, T2, T3	CS
Greece	0.17	T1	D	0.01	T1	D
Hungary	2.48	T1, T2	CS	0.21	T1	CS, D
Iceland	0.01	T1	D	0.00	T1	D
Ireland	0.13	T1, T3	CS, D, PS	0.00	T3	CS
Italy	0.85	T1, T2	CS, D	0.50	T1, T2	CS, D
Japan	0.02	CS, T1	CS, D	0.02	T1	D
Kazakhstan	1.41	T1	CR, D	0.00	T1	D
Latvia	0.96	T3	CS	0.00	T3	CS
Liechtenstein	0.43	T3	CS	0.00		
Lithuania	1.25	T1, T2	CS, D	0.90	T1, T2, T3	CS, D, PS
Luxembourg	0.31	T1	D	0.00	T1	D
Malta	–			–		
Monaco	0.75	T3	CS	0.00	T3	CS
Netherlands	0.25	T1, T1b, T3	CS, D	0.52	CS, T1, T2, T3	CS, D, PS
New Zealand	0.49	T1, T3	CS, D	0.42	T1, T2, T3	CS, D
Norway	0.92	T2	CS, PS	3.07	T2	CS, PS
Poland	0.71	T1	CS, D	0.03	T1	CS, D
Portugal	0.09	CR, OTH	CR, OTH	1.69	D	D
Romania	2.12	T1	D	0.72	T1, T3	D, PS
Russian Federation	4.57	T1b, T2	CS, D	2.87	T1b, T2	CS, D
Slovakia	0.63	T1, T3	CS, PS	0.00	T1, T3	CS, PS
Slovenia	0.25	T1	D	0.00	T1	D
Spain	0.06	CS, T1	CS, D	1.29	CS, T1, T2	CS, D, PS
Sweden	0.10	T1, T2, T3	CS, D, PS	0.95	T2, T3	CS, PS
Switzerland	0.43	T1, T2	CS, D	0.06	T2	CS
Türkiye	0.54	T1	D	0.04	T1	D
Ukraine	11.77	T1, T2	CS, D	0.66	T1, T2	CS, D
United Kingdom of Great Britain and Northern Ireland (KP)	1.04	T1, T2, T3	CS, D, PS	0.80	T1, T2, T3	CS, D, PS
United Kingdom of Great Britain and Northern Ireland (Convention)	1.04	T1, T2, T3	CS, D, PS	0.79	T1, T2, T3	CS, D, PS
United States of America	3.54	CS	CS	1.10	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, Cyprus, Czechia, Denmark (Convention), Denmark (KP), European Union (Convention), European Union (KP), Finland, Japan, Latvia, Netherlands, Portugal, Slovakia and Switzerland.

Table 1.11b

Fugitive emissions from fuels: oil and natural gas - oil - CH_4, CO_2 (2020)

	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	1 604	NA, NO	PJ	Crude Oil and ORF Produced	85	NA, NO	PJ	Crude oil transport domestic	1 114	100 493	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	pcs	number of wells drilled	30 000	2 150	10^3 m^3	PJ of oil produced	5.4	0.49	10^3 m^3	PJ oil loaded in tankers	22	NE, NO	10^3 m^3	PJ oil refined
Belgium	NO	NO	PJ	Not occuring	NO	NO	PJ	Not occuring	150	14	PJ	Oil transported	109	NA, NO	PJ	Oil refined
Bulgaria	20	4 400	103m3	Indigenous production	2 910	44 990	103m4	Indigenous production	25	2.3	103m3	Indigenous production	31	36 918	103m3	Refinery intake
Canada	IE	IE, NO	NA	NA	2 540	3 423	10^3 m^3	Total crude production	0.075	0.10	10^3 m^3	Total crude production	28	6.5	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 pipelines	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)	4 735	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	0.022	NA, NO	Mg	Oil loaded	0.10	0.021	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		0.022	NA, NO	dnm:Mg grl:NO fro:NO		0.10	0.021	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	55	5.0	PJ	Oil loaded	5.8	1 207 087	PJ	Oil refined
France (Convention)	NE	NE	PJ	Oil produced	54 578	7 201	PJ	Oil produced	55	5.0	PJ	Oil loaded	5.8	1 207 087	PJ	Oil refined
Germany	64	0.48	number	Number of wells drilled	0.044	0.10	t	oil produced	0.007	NA, NO	t	oil transported	0.000	4.7	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)	9.7	52	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	365	321	Gg	Oil produced	6.2	0.56	Gg	Oil transported	13.5	22 659	Gg	Oil refined
Japan	IE	IE, NO			1 062 518	76 738	10^6 m^3	Oil produced	67 856	4 770	10^6 m^3	Oil & condensate produced	2 629	NE, NO	10^6 m^3	Oil refined
Kazakhstan	0.23	0.11	t	Oil produced	2 170	157	t	Oil produced	9.1	0.83	t	Oil produced	36.1	7.0	t	(Oil produced)
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	NA		IE	IE, NO	NA		5.8	0.53	Gg	Amount of oil transported	179	365 897	PJ	Total amount of oil products
New Zealand	0.000	0.028	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	1 282	28 586	PJ	Oil loaded in tankers	3 152	1 275 113	PJ	Oil refined
Poland	225	10 571	Gg	NA	75 651	5 464	PJ	Production	6.3	0.57	Gg	oil ltransported by pipeline	48	NA	Gg	oil refined
Portugal	NO	NO	NO		NO	NO	NO		6 375 442 740	578 512	Mt		5.5	17 146 242 394	Mt	
Romania	950	259 006	PJ	oil produced	62 826	7 509	PJ	oil produced	149	14	PJ	oil refined	613	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	722	59	Tg	Crude oil produced	563	51	Tg	Transport of crude oil	1 397	54 395 870	Tg	Oil refined
Sweden	C	C, NA	TJ	Consumption of feedstock	NO	NO		Oil production	0.002	NE	m3	Transported amount of oil	C	C, NA	Mt	Consumption of crude oil
Switzerland	NO	NO			NO	NO			1.0	NA, NO	Number	Number of refineries/pipelines	7.0	NA, NO	kt	Amount of crude oil imported/refined
Türkiye	NO	NO	NO		3 600	260	10^3 m^3	oil production	4.6	66	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	NE	PJ	Oil refined
United Kingdom of Great Britain and Northern Ireland (KP)	34	3 036	t	Exploration drilling: fuel use	1 277	4 758	PJ	Oil produced	0.020	0.000	t	Oil loading	5.0	NO	PJ	Refinery throughput
United Kingdom of Great Britain and Northern Ireland (Convention)	34	3 036	t	Exploration drilling: fuel use	1 277	4 758	PJ	Oil produced	0.020	0.000	t	Oil loading	5.0	NO	PJ	Refinery throughput
United States of America	2 915	208 722	10^6 Bbl(oil US)	Annual Domestic Production	378 116	6 062 912	10^6 Bbl(oil US)	Annual Domestic Production	1 658	236	10^6 Bbl(oil US)	Refinery Feed	6 021	831 703	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 (2020)

	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	6 911	141	PJ	Natural gas produced	10 069.26	1 944.214	PJ	Natural gas produced	NA	NA	NA	NA	115 487	6 503	PJ	Utility sales	NA	NA	NA	Appliance count and PJs
Austria	4 257	67 295	Mm3	Mm3 natural gas	NA	268 664	Mm3	Mm3 natural gas	532	25	km	km pipeline length	48	2.2	km	km distribution network length	NO	NO	Mm3	Mm3 natural gas stored
Belarus	12 000	97	10^6 m^3	PJ gas produced	159	13	10^6 m^3		315	1.4	10^6 m^3	Gas consumed	1 800	96	10^6 m^3	Gas consumed	NO	NO	10^6 m^3	Gas consumed
Belgium	NO	NO	PJ	Not occuring	NO	NO	PJ	Not occuring	6 838	NA, NO	PJ	Gas consumed	23 205	746	PJ	Gas consumed	NO	NO	PJ	Not occuring
Bulgaria	2 540	3 600	106m3	Indigenous production	570	7 210	106m3	Indigenous production	2 117	255	km	Pipeline length	230	10	km	Pipeline length	826	6.8	106m3	Natural gas consumption at energy and industrial plants
Canada	1 198	33	10^6 m^3	Natural gas production	40	1.5	10^6 m^3	Natural gas production	566	393	km	Transmission pipeline length	144	7.4	km	Distribution pipeline length	27	1.7	number	Number of gas wells + spills
Croatia	1 341	292 654	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	38 649	15	PJ	(e.g. PJ gas produced)	NA	NA, NO	PJ		4 405	18	PJ	(e.g. PJ gas consumed)	129 301	515	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	64	0.81	10^6 m3	Gas transmission	68	0.78	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		64	0.81	dnm:10^6 m3 grl:NO fro:NO		68	0.78	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	5 735	30	PJ	Amount of the transmission of Natural Gas	38 001	1 762	PJ	Amount of natural gas distributed	NO	NO	NA	Other
European Union (KP)																				
European Union (Convention)																				
Finland	NO	NO	NO		NO	NO	NA		2 626	NE, NO	PJ	PJ gas consumed	16 569	NE, NO	PJ	PJ gas distributed	NO	NO	NO	
France (KP)	IE	IE, NO	PJ	NO	304	5 361 447	PJ	Gas processed	7 395	76	PJ	Gas consumed	13 368	138	PJ	Gas consumed	NO	NO	PJ	NO
France (Convention)	IE	IE, NO	PJ	NO	304	5 361 447	PJ	Gas processed	7 395	76	PJ	Gas consumed	13 368	138	PJ	Gas consumed	NO	NO	PJ	NO
Germany	0.050	0.099	1000 m³	gas produced	0.020	91	1000 m³	gas produced	2 140	8.9	km	lenght of transmission pipelines	176	1.2	km	lenght of distribution pipelines	23	0.18	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)	921	0.99	million m3	Marketable gas (million m3)	438	5.3	km	length of pipelines	NO	NO	NO	
Iceland	NO	NO			NO	NO			NO	NO			NO	NO			NO	NO		
Ireland	16	NE, NO	PJ		IE	NE, NO	PJ		1 693	37	PJ		23 502	443	PJ		NO	NO	PJ	
Italy	114	82	Mm3	Gas produced	51	320	Mm3	Gas produced	314	8.2	Mm3	Gas transported	3 168	83	Mm3	Gas distributed	NO	NO	NA	other
Japan	2 229	79	10^6 m^3	Gas produced	755	235	10^6 m^3	Gas produced	142	NA, NO	10^6 m^3	Gas sold	9.51	NA, NO	10^6 m^3	City gas sold	IE, NA	NA, NO		
Kazakhstan	134	48	10^6m^3	(Gas produce	0.59	0.17	10^6 m^3	(Gas produced)	298	0.99	bln m3	(Gas produced)	11	51	Bln m3	(Gas produced)	NA	NA, NO		(Gas produced)
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	31	0.24	TJ	gas consumed	NO	NO	TJ	gas produced
Lithuania	NO	NO	NO		NO	NO	NO		951 692	695	kt	Natural gas leakages	951 692	695	kt	Natural gas leakages	951 692	695	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	0.70	0.012	m	CH4	NO	NO	NO	NO
Netherlands	IE	IE, NO	mln m3	Gas produced	IE	IE, NO	NA		1 331	25	PJ	Gas transmitted	43 378	1 335	10^3 km	Length distribution network	NO	NO	NA	
New Zealand	1 195	43	million m3		NE	NE, NO	NA	Not significant.	414 656	52 800	TJ		14 093	2 136	TJ		NO	NA, NO	NA	
Norway	IE	9 671	10^6 m^3	Gas produced	IE	IE, NO	PJ	Gas processed	IE	IE, NO	PJ	Gas export	44 354	IE, NO	PJ	Gas consumption	234 260	1 206 030	PJ	Gas processed
Poland	2 290	82	10^6m3	Production	1 030	320	10^6m3		505	0.99	10^6m3	gas consumed	1 100	51	10^6m3	gas consumed	NO	NA, NO	NA	NA
Portugal	NO	NO	NO		NO	NO	NO		11	0.21	toe NG Transmitted		1 136	22	toe NG Distributed		NO	NO	NO	
Romania	1 340	48	106m3	gas produced	590	166	106m3	gas produced and processed	232	0.75	106m3	gas produced	1 100	51	106m3	gas supplied	60 105	NO	PJ	gas consumed
Russian Federation	213	4.3	10^6 m3	Natural Gas produced	IE	IE, NO	10^6 m3	Natural Gas produced	1 745	7.5	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		19	0.88	mil m3	Transfer	1 100	51	mil m3	Distribution	79	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	2 115	75	Mm3	Mm3 gas produced	150	12	Mm3	Mm3 gas produced	1 512	21	PJ	PJ gas (NCV)	3 102	46	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			17 931 000	559 000	PJ	Losses of natural gas in transit pipeline	17 931 000	559 000	PJ	Losses of natural gas in distribution network	NO	NO	PJ	Losses of natural gas due to major accidents
Türkiye	2 300	82	10^6 m^3	Natural gas production	1 030	320	10^6 m^3	Natural gas production	458	0.84	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	274 821	6 511	Mt	gas transmitted	24 455 056	579 428	10^9 m^3	The volume of natural gas	243 685	1 921	PJ	Residential and Non-
United Kingdom of Great Britain and Northern Ireland (KP)	1 182	292	PJ	Gas produced	1 203	277 234	PJ	Gas produced	6.0	0.24	GWh	Natural gas supply	260	11	GWh	Natural gas supply	NO	NO	NA	
United Kingdom of Great Britain and Northern Ireland (Convention)	1 182	292	PJ	Gas produced	1 203	277 234	PJ	Gas produced	6.0	0.24	GWh	Natural gas supply	260	11	GWh	Natural gas supply	NO	NO	NA	
United States of America	103 192 916	231 041 579	10^9 ft^3	Annual Production	14 766 249	760 565 727	NA	Annual Production	53 315 457	66 803 880	10^9 ft^4	Consumption	18 190 142	539 503	10^9 ft^3	Consumption	NA	NA	NA	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 (2020)

	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	35 003	2 906 642	kt	Quantity of Oil and Gas Flared	9 632	PJ	Natural gas, crude oil and ORF produced	4 762	2 706 329	kt	Quantity of Oil and Gas Flared	NO	NA, 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	30	49 000	10^6 m^3	Flaring
Belgium	NO	IE, NO	PJ	Please refer to other sector	NO	NO	PJ	Not occuring	12	PJ	Transported gas	NO	NO	PJ	Not occuring	NO	NO	PJ	Not occuring	IE	NA	PJ	Please refer to other sector
Bulgaria	IE	IE	NA	Indigenous production	1.0	55 564	TJ	Natural gas used for hydrogen production in oil refineries	IE	NA	Indigenous production	IE	IE	106m3	Indigenous production	NO	NO	NO		NO	NO	NO	
Canada	1 496	31 015	10^3 m^3	Total crude production	9 808	2 808 704	10^6 m^3	Associated gas flared	1 169	10^6 m^3	Natural gas production	12 987	2 390 258	10^6 m^3	Non-associated gas	66	1.6	number	Number of wells drilled	81	12 898	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	19	GJ	Venting in gas terminals	0.018	57	GJ	Gas consumption	NO	NO	GJ	Amount vented	0.25	58	GJ	Gas consumption
Denmark (Convention)	NO	NO	dnm:GJ grl:NO fro:NO		0.018	58	dnm:GJ grl:NO fro:NO		19	dnm:GJ grl:NO fro:NO		0.018	57	dnm:GJ grl:NO fro:NO		NO	NO	dnm:GJ grl:NO fro:NO		0.25	58	dnm:GJ grl:NO fro:NO	
Estonia	NO	NO	NA	Oil	NO	NO	NA	Oil	6 287	PJ	Gas	NO	NO	NA	Gas	NO	NO	NA	Combined	NO	NO	NA	Combined
European Union (KP)																							
European Union (Convention)																							
Finland	NO	NO	NO		0.78	53 975	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	14 693	66 132 807	PJ	Gas Flared	IE	Gg	Gas produced	5 518	2 194 575	Gg	Consumption	NO	NO	PJ	Oil and Gas produced	NO	NO	PJ	Consumption
France (Convention)	19 942	2 631	PJ	Oil produced	14 693	66 132 807	PJ	Gas Flared	IE	Gg	Venting emissions are not separately reported by the plant, included within Flaring emission reporting.	5 518	2 194 575	Gg	Consumption	NO	NO	PJ	Oil and Gas produced	NO	NO	PJ	Consumption
Germany	IE	IE, NO	t	amount vented	0,26	3 527	kt	oil refined	IE	t	amount vented	IE	IE	t	amount flared	IE	IE, NO	m3	amount vented	IE	IE, NO	t	amount flared
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	304	56 915	1000 m3	Conventional oil production	5 822	million m6	Sour gas plants-raw gas	2.7	4 170	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		3 073	PJ		1 000	55 596 352	PJ	Natural gas flaring	NO	NO	PJ		NO	NO	PJ	
Italy	524	2 061	Gg	Oil produced	122	38 926	Gg	Oil produced	NA	Mm3	Gas produced	26	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			271	5 700	wells	Number of wells tested
Kazakhstan	NO	NO	NO	(Gas produced)	IE	IE	IE		NO	NO	(Gas produced)	IE	IE	IE	(Gas produced)	NO	NO	NO		1.1	2 149	mln.m^3	(Gas produced)
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	41 095	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	0.66	NM3	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	Oil production	IE	IE, NO	10^6 m^3	Oil production	IE	PJ	Gas Production	IE	IE, NO	PJ	Gas Production	IE	IE	NA		IE	IE	NA	
New Zealand	IE	IE	NA	The fields produce both oil and gas and, therefore are reported as combined. Disaggregated data does not exist.	IE	65 485	TJ		NE	TJ		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	52 626	TJ	
Norway	IE	IE, NO	PJ	(See Venting combined)	9.3	73 578 882	PJ	Oil flared	IE	PJ	(See Venting combined)	153 853	64 203 331	PJ	Gas flared	1 016	5 031	PJ	Oil and gas produced	IE	IE, NO	PJ	(See Flaring of Oil/Gas in i/ii)
Poland	1 520	169	Gg	oil produced	47 619	29	Gg	oil produced	IE	NA	NA	1 212	18 486	10^6m3	gas production	NO	NA, NO	NA	NA	NO	NA, NO	NA	NA
Portugal	NO	NO	NO		1 399	2 637 998	kt		NO	NO		NO	NO	NO		NO	NO	NO		NO	NO	NO	
Romania	248 449	51 403	PJ	oil produced	600	970 950	PJ	gas consumed	182	106m3	gas produced	0.76	1 200	106m3	gas consumed	NA	NA, NO	PJ	gas and oil produced	NA	NA, NO	PJ	gas and oil combined
Russian Federation	720	95	10^3 m3	Oil and Condensate produced	15 500	2 760 000	10^6 m3	Associated gas flaring	IE	10^6 m3	Marketable Gas	0.10	568	10^6 m3	Natural Gas production	NO	NO	NA		NO	NO	NA	
Slovakia	720	95	kt	Venting oil	25	41 000	kt	Flaring oil	35	mil m3	Venting gas	2.0	3 000	mil m3	Flaring gas	NO	NO	NA		NO	NO	NA	
Slovenia	NO	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	107 588	Tg	Tg gas venting	116	5 791 099	Tg	Tg gas consumption	644 103 420	PJ	gas produced	336	62 533	Mm3	Mm3 gas consumption	NO	NO	NO	NO	NO	NO	NO	NO
Sweden	IE	IE		Venting of oil products	5.3	61 007	TJ	Venting of oil products	0.64	m3	Venting of gas products	1.0	56 950	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		
Türkiye	720	95	10^3 m^3	(Oil production	219	50 102	10^3 m^3	Oil production	34 572	10^6 m^4	Natural gas production	2.0	3 000	10^6 m^3	Natural gas production	NO	NO	NO		NO	NO	NO	
Ukraine	855	112	10^3 m^3	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		9.6	2 500	t	Amount of gas flared	NA	NA		13	2 689	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		9.6	2 500	t	Amount of gas flared	NA	NA		13	2 689	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

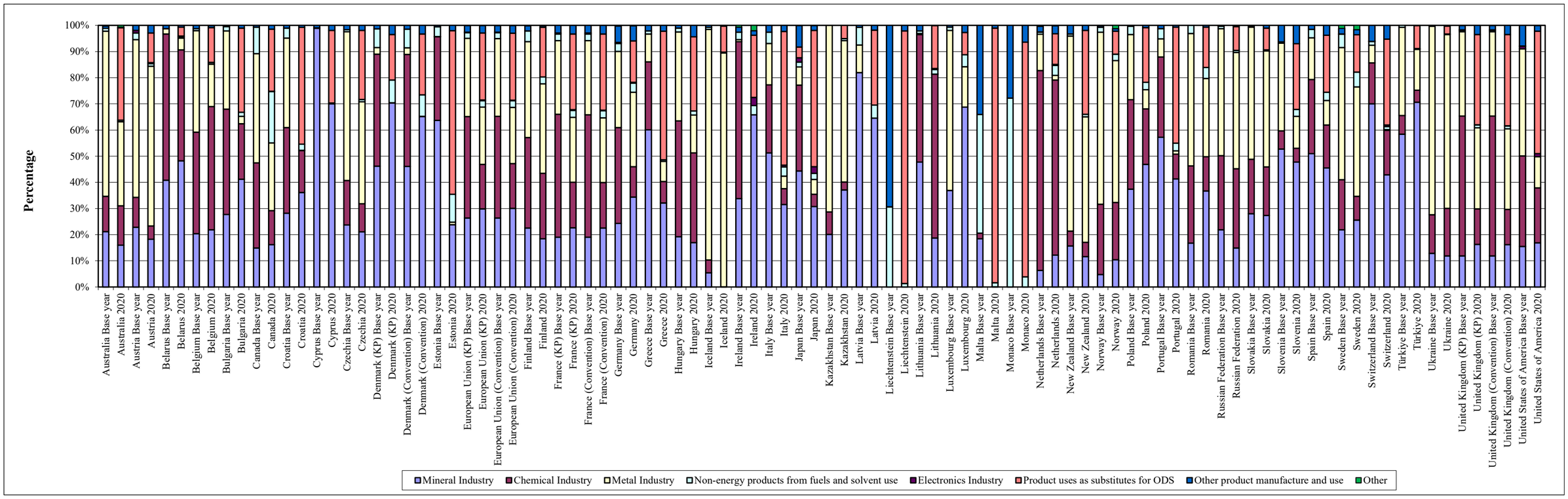
CO_2 transport and storage (2020)

	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	2 720	2 287	5 428	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	136	3 430	4.0	6 095	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)	IE, NA, NO	IE, NA, NO	NA, NO	NA, NO	NA, NO	NO
European Union (Convention)	IE, NA, NO	IE, NA, NO	NA, NO	NA, NO	NA, NO	NO
Finland	IE, NA	IE, NA	NA	NA	NO	NO
France (KP)	NO	NO	NA, NO	NO	NO	NO
France (Convention)	NO	NO	NA, NO	NO	NO	NO
Germany	NA	NO	NA	NO	NA	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	NO	NO	NE, NO	NO	NO	NO
Kazakhstan	NO	NO	NA	NA	NO	NO
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	422	134	27 232		
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	NA, 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
Türkiye	NA, NO	NA, NO	NE, NO	NE, NO	NO	NO
Ukraine	NO	NO			NO	NO
United Kingdom of Great Britain and Northern Ireland (KP)	NO	NO	NO	NO	NO	NO
United Kingdom of Great Britain and Northern Ireland (Convention)	NO	NO	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 (2020)

	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	5 246	0.54	0.20	0.68		IE, NO
Austria	T1, T3	D, PS	2.47	Cement clinker	3 522	0.52	0.76	0.75	0.05	0.078
Belarus	T1, T2	CS, D	2.59	Used clincer production data	4 399	0.52	0.41	0.75	0.10	0.13
Belgium	T3	CS, PS	2.48	Clinker Production	4 817	0.55	1.12	0.78	0.10	0.093
Bulgaria	T1, T2	CS, D, PS	2.17		2 000	0.53	0.41	0.78	0.17	0.13
Canada	T1, T2, T3	CS, D	0.98	clinker production	12 608	0.53	0.18	0.75	0.01	0.42
Croatia	T2, T3	PS	5.11	clinker production	2 351	0.52	0.44	0.80	0.11	0.43
Cyprus	CS, T1	CS, D	9.94	Clinker production	1 694	0.52	0.04	0.73		NO
Czechia	T1, T3	D, PS	1.67	clinker production	3 556	0.53	0.57	0.76	0.12	0.12
Denmark (KP)	CS, T2, T3	CS, D, PS	2.94	Production of Clinker	2 240	0.55	0.10	0.78	0.02	0.053
Denmark (Convention)	CS, T1, T2, T3	CS, D, PS	2.81	Production of Clinker	2 240	0.55	0.10	0.78	0.02	0.053
Estonia	T1, T2, T3	D, PS	0.17	Clinker production	35	0.58	0.35	0.74	0.08	0.12
European Union (KP)			2.00		140 705	0.53	0.46	0.73	0.11	NE
European Union (Convention)			2.01		140 705	0.53	0.46	0.73	0.11	NE
Finland	T1, T3	CS, D, PS	1.19	Produced clinker	1 141	0.50	0.56	0.80	0.00	0.40
France (KP)	T1, T2, T3	CS, D, PS	1.58	Clinker consumption	11 771	0.53	0.51	0.66	0.12	0.16
France (Convention)	T1, T2, T3	CS, D, PS	1.55	Clinker consumption	11 771	0.53	0.50	0.66	0.12	0.16
Germany	T1, T2	CS, D	1.83	produced clinker	25 203	0.53	0.57	0.75	0.12	0.12
Greece	CS, T1	CS, D, PS	3.98	clinker production	5 745	0.52	0.21	0.73	0.02	0.16
Hungary	T2, T3	CS, D, PS	1.48	Clinker production (kt)	C	C	0.23	0.74	0.07	0.13
Iceland	T3	PS		clinker production	NO	NO		NO		NO
Ireland	T3	PS	3.07	clinker production	3 273	0.54	0.23	0.76		NO
Italy	T2	CS, PS	1.85	Clinker production	13 389	0.53	0.42	0.74	0.15	0.097
Japan	CS, T2	CS	2.13	Production of clinker	47 522	0.52	0.48	0.43	0.02	0.000
Kazakhstan	T1, T2	CS, D	1.30	clinker production	8 453	0.53	0.19	0.74	0.00	0.100
Latvia	T1, T2, T3	D, PS	5.27	(produced clinker)	1 084	0.51		NA, NO	0.01	C
Liechtenstein	NA	NA		Production	NO	NO		NO		NO
Lithuania	T1, T2	CS, D, PS	2.76	Clinker production	1 039	0.54	0.01	0.78	0.04	0.16
Luxembourg	CS, T2	CS, PS	4.40	clinker production	784	0.51		NO	0.38	0.12
Malta	T1	D		not occurring	NO	NO		NO		NO
Monaco	NA	NA		NO	NO	NO		NO		NO
Netherlands	CS, T1, T2, T3	D, PS		clinker production	NO	NO	0.11	0.44	0.04	0.040
New Zealand	CS, T1	CS, D	0.48	Clinker produced	C	C	0.12	0.78		NA
Norway	T1, T3	CS, D, PS	1.47	Production quantity	1 407	0.52	0.39	0.75	0.01	0.47
Poland	T1, T2	CS, D	2.05	Clinker production	14 361	0.54	0.35	0.74	0.16	0.16
Portugal	T1, T3	OTH	4.01		4 569	0.51	0.67	0.69	0.27	0.094
Romania	CS, OTH, T2, T3	CS, D, PS	3.55	clinker production	7 474	0.52	0.47	0.75	0.05	0.13
Russian Federation	T1, T2	CS, D	1.00	Clinker production	38 968	0.53	0.42	0.77	0.09	0.14
Slovakia	T2, T3	PS	3.90	Cement clinker	2 945	0.49	1.16	0.78	0.05	0.42
Slovenia	T2, T3	CS, D	3.00	Clinker produced	924	0.51	0.36	0.75	0.07	0.13
Spain	T1, T2, T3	CS, D, PS	2.98	Clinker production	15 653	0.52	0.49	0.70	0.16	0.097
Sweden	T3	CS, D, PS	2.75	Production of clinker	2 438	0.52	0.84	0.75	0.03	NE
Switzerland	CR, T2, T3	CS, D, OTH,	3.87	clinker production	3 129	0.54	0.11	C	0.02	0.042
Türkiye	T1, T2	CS, D	7.79	Clinker Production	77 539	0.53	0.54	0.70	0.13	0.16
Ukraine	T1, T2, T3	CS, D	1.27	clinker production	7 690	0.52	0.73	0.78	0.08	0.18
United Kingdom of Great Britain and Northern Ireland (KP)	CS, T1, T3	CS, OTH	0.96	Clinker production	6 941	0.56	0.25	0.45	0.08	0.18
United Kingdom of Great Britain and Northern Ireland (Convention)	T1, T3	CS	0.96	Clinker production	6 941	0.56	0.25	0.45	0.08	0.18
United States of America	T1, T2, T3	D	0.68	Clinker Production	78 200	0.52	0.19	0.71	0.03	0.43

[a] The national total includes indirect CO_2 emissions from the atmospheric oxidation of CH_4, CO and NMVOCs for the following Parties: Canada, Cyprus, Czechia, Denmark (Convention), Denmark (KP), European Union (Convention), European Union (KP), Finland, Japan, Latvia, Netherlands, Portugal, Slovakia 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 (2020)

	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)	CO_2 IEF	Methods	EF	Share of national total[a]	Activity data (production)	N_2O IEF	Share of national total[a]	N_2O IEF
			(%)	(kt)	(t/t)			(%)	(kt)	(t/t)	(%)	(t/t)
IPCC default EF[b]					1.666 to 3.273					0.002 to 0.009		0.3
Australia	T2, T3	CS, D	0.40	1 816	1.3	T3	CS	0.37	1 815	0.004		NO
Austria	T1, T2, T3	D, PS	0.67	516	1.3	T3	PS	0.07	557	0.000		NO
Belarus	T1, T2	CS, D	1.44	852	2.6	T1, T2	D	0.84	499	0.005		NO
Belgium	T3	D, PS	1.07	1 069	1.2	T3	PS	0.26	2 209	0.000		NO
Bulgaria	T2	CS, PS	1.21	C	C	T3	PS	0.17	C	C		NO
Canada	T1, T2, T3	CS, D, OTH, PS	0.37	4 497	1.3	T1, T2, T3	CS, PS	0.03	815	0.001		NO
Croatia	T3	PS	2.25	454	2.0	T3	PS	0.27	294	0.001		NO
Cyprus				NO	NO				NO	NO		NO
Czechia	T1	CS, D, PS	0.34	117	3.3	CS, T3	CS, PS	0.06	492	0.000		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)			0.61	16 078	1.8			0.08	NE	NE	0.01	NE
European Union (Convention)			0.61	16 077	1.8			0.08	NE	NE	0.01	NE
Finland	CS, T2, T3	CS, PS		NO	NO	T3	PS	0.47	659	0.001		NO
France (KP)	T1, T2, T3	CS, D, PS	0.34	1 000	1.5	T2, T3	CS, D, PS	0.11	1 731	0.001	0.00	C
France (Convention)	T1, T2, T3	CS, D, PS	0.33	1 000	1.5	T2, T3	CS, D, PS	0.11	1 731	0.001	0.00	C
Germany	T1, T2, T3	CS, D, PS	0.57	2 994	1.8	T3	PS	0.05	2 535	0.001	0.03	C
Greece	T1, T1a	CS	0.26	116	1.7	CS	CS	0.03	189	0.000		NO
Hungary	T3	PS	1.97	23 119	0.056	T3	PS	0.05	900	0.000		NO
Iceland				NO	NO				NO	NO		NO
Ireland				NO	NO				NO	NO		NO
Italy	D, T2, T3	CR, PS	0.17	598	1.8	T3	D, PS	0.01	447	0.000	0.02	0.004
Japan	CS, T1, T2, T3	CS, D	0.12	761	1.9	CS, T1, T2	CS, PS	0.02	227	0.003	0.03	C
Kazakhstan	T1, T2	CS, D	0.13	218	2.1	T1	D	0.06	286	0.002		NO
Latvia				NO	NO				NO	NO		NO
Liechtenstein				NO	NO				NO	NO		NO
Lithuania	T3	CS	8.83	995	2.1	T3	PS	0.77	1 113	0.000		NO
Luxembourg				NO	NO				NO	NO		NO
Malta	T1	D		NO	NO				NO	NO		NO
Monaco				NO	NO				NO	NO		NO
Netherlands	CS, T1, T3	CS, D	1.34	C	C	T1, T2	CS, PS	0.12	C	C		NO
New Zealand	T1, T2	CS, D	0.02	137	1.4				NO	NO		NO
Norway	T2	CS, D, PS	1.27	402	2.0	CS, T2, T3	PS	0.20	1 951	0.000		NO
Poland	T1, T2	CS, D	0.98	2 647	1.7	T1, T2	CS	0.10	2 413	0.001		NA, NO
Portugal	NO	NO		NO	NO	T3	PS	0.06	C	C		NO
Romania	T1, T3	D, PS	1.44	860	2.3	T3	PS	0.08	C	C		NO
Russian Federation	T1, T2, T3	CS, D	1.56	19 618	2.0	T1	D	0.30	10 158	0.002		
Slovakia	T2, T3	CS, PS	1.90	545	1.6	T3	D, PS	0.20	580	0.000		NO
Slovenia	T2, T3	CS, D		NO	NO				NO	NO		NO
Spain	T1, T3	D, PS	0.12	C	C	T1, T3	D, PS	0.05	692	0.001		NO
Sweden	T1, T3	D, PS		NO	NO	T2, T3	CS, PS	0.01	280	0.000		NO
Switzerland	T2	PS		C	C	T2	PS		NO	NO		NO
Türkiye	T1, T2	CS, D	0.10	C	C	T1	D	0.38	1 300	0.005		NO
Ukraine	T1, T3	CS, D	1.30	2 806	2.1	T2	CS, D	0.71	1 679	0.005		NO
United Kingdom of Great Britain and Northern Ireland (KP)	CS, T1, T3	CS, D	0.41	1 038	1.6	T1, T3	CS, D	0.01	1 141	0.000		NO
United Kingdom of Great Britain and Northern Ireland (Convention)	CS, T1, T3	CS, D	0.41	1 038	1.6	T1, T3	CS, D	0.01	1 141	0.000		NO
United States of America	CS, T1	CS, D, OTH	0.21	16 855	1.3	CS, T1	CS, D	0.16	7 970	0.004	0.14	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, Cyprus, Czechia, Denmark (Convention), Denmark (KP), European Union (Convention), European Union (KP), Finland, Japan, Latvia, Netherlands, Portugal, Slovakia 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 (2020)

	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	IE, NO	NO	NO	0.44	1 576	1.5
Austria	T1, T3	CS, D, PS	12.81	6 187	1.5	5 286	IE, NO	0.007	C	C
Belarus	T1	D	0.23	2 560	0.080	NO	NO		NO	NO
Belgium	CS, T3	PS	2.78	6 008	0.48	3 647	IE, NA		NO	NO
Bulgaria	T2	CS, PS	0.04	579	0.038	NO	NO		C	NO
Canada	T2, T3	CS, PS	1.04	10 849	0.073	6 428	0.96	0.76	3 113	1.6
Croatia	OTH, T3	PS	0.02	45	0.096	NO	NO		NO	NO
Cyprus				NO	NO	NO	NO		NO	NO
Czechia	CS, T1, T2	CS, D, PS	5.23	4 455	IE, NA	3 552	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)			1.83	NE	NE	NE	NE	0.12	NE	NE
European Union (Convention)			1.83	NE	NE	NE	NE	0.081	NE	NE
Finland	CS, T2, T3	CS	3.62	3 440	0.50	NO	IE, NO		NO	NO
France (KP)	T1, T2, T3	CS, D, PS	2.15	11 590	0.73	IE	IE	0.17	C	C
France (Convention)	T1, T2, T3	CS, D, PS	2.12	11 590	0.73	IE	IE	0.17	C	C
Germany	T1, T2, T3	CS, D	1.99	35 680	0.41	23 003	IE	0.099	529	1.4
Greece	CS, T1	CS, D, PS	0.10	1 323	0.056	NO	NO	0.39	189	1.6
Hungary	T3	PS	1.77	1 518	0.094	930	1.8		NO	NO
Iceland	T3	PS		NO	NO	NO	NO	28	833	1.5
Ireland				NO	NO	NO	NO		NO	NO
Italy	T2	CR, CS, PS	0.32	20 378	0.045	3 406	0.085		NO	NO
Japan	T1, T2	CS, OTH	0.47	25	3.7	11 763	0.45		NO	NA, NO
Kazakhstan	T1, T2, T3	CS, D	2.06	4 009	0.12	3 102	1.7	0.12	265	1.5
Latvia				NO	NO	NO	NO		NO	NO
Liechtenstein						NO	NO		NO	NO
Lithuania	T2	D	0.00	NO	NO	NO	NO		NO	NO
Luxembourg	CS, T1, T2	CS, PS	1.06	1 887	0.051	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	6 212	0.003	NA	IE, NO	0.070	88	1.3
New Zealand	T2, T3	CS	2.00	C	C	NA	NA, NO	0.70	333	1.6
Norway	T2, T3	CS, PS	0.07	622	0.052	NO	NO	4.1	1 328	1.5
Poland	T1, T2, T3	CS, D	0.36	IE	IE	3 470	0.13		NO	NA, NO
Portugal	T1, T3	D, PS	0.15	2 203	0.038	NO	NO		NO	NO
Romania	D, T3	CS, D, PS	3.20	2 875	1.2	C	IE, NO	0.29	192	1.6
Russian Federation	T1, T2, T3	CS, D, PS	4.68	73 802	0.11	52 003	1.4	0.32	C	C
Slovakia	T1, T2, T3	D, PS	8.49	3 119	1.0	NO	IE, NO	0.64	152	1.6
Slovenia	T1, T2	D, PS	0.34	609	0.088	NO	NA, NO	0.46	50	1.5
Spain	T1, T2, T3	CS, D, PS	0.48	11 077	0.046	C	C	0.13	C	C
Sweden	T2, T3	PS	4.51	1 750	C, NA	2 846	0.60	0.37	115	1.5
Switzerland	CR, T2, T3	CS, D, PS	0.02	1 125	0.009	NO	NO		NO	NO
Türkiye	T1, T2, T3	CS, D, PS	1.93	35 338	0.23	4 002	IE, NO	0.022	80	1.5
Ukraine	T1, T3	CS, D	11.14	20 616	0.13	20 238	1.5		NO	NO
United Kingdom of Great Britain and Northern Ireland (KP)	T1, T2	CS	2.62	7 154	0.014	5 236	1.8	0.014	36	1.5
United Kingdom of Great Britain and Northern Ireland (Convention)	T1, T2	CS	2.62	7 154	0.014	5 236	1.8	0.014	36	1.5
United States of America	T1, T2, T3	CS, D, OTH	0.63	51 349	0.11	18 320	0.36	0.029	1 012	1.7

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

[b] In addition to data reported here, CO_2 and CH_4 emissions estimates from different Metal production sub-categories were reported by Austria, Belgium, Czechia, Denmark (KP), Denmark (Convention), Estonia, European Union (KP), European Union (Convention), France (KP), France (Convention), Germany, Greece, Hungary, Iceland, Kazakhstan, Norway, Poland, Portugal, Romania, Russian Federation, Slovakia, Slovenia, Spain, Sweden, Switzerland, Türkiye, Ukraine, United Kingdom (KP), United Kingdom (Convention), and United States of America.

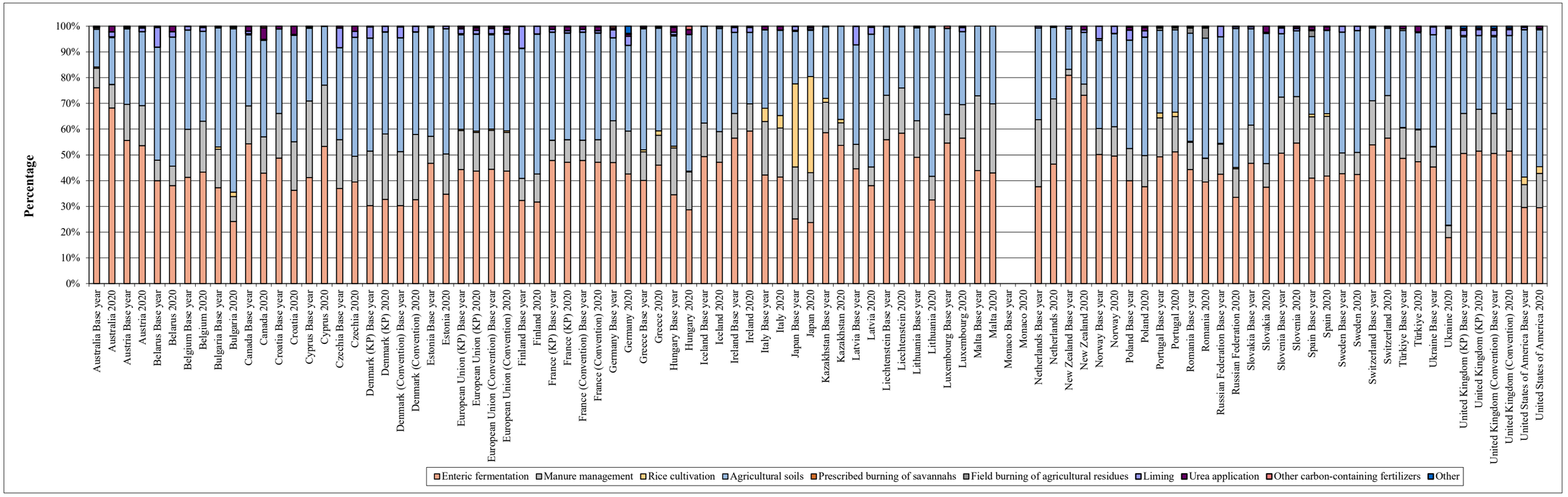
[c] Source of default emission factors: 2006 IPCC Guidelines for National Greenhouse Gas Inventories Volume 3 Chapter 4 Metal Industry Emissions. Iron and steel table 4.1; Aluminium table 4.10.

Table 2.4
HFCs, PFCs, SF_6 and NF_3 (2020)

	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													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			T3	PS	T3	PS	T1, T2	D, PS	T2	CS, D, PS	T2	D	T2	CS, D	T1, T2	D				
Croatia													CS, T1, T1a, T2	CS, D, PS						
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	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						
Japan		CS			T2	OTH	T2	CS, D	T2	CS, D	T2	CS, D	CS	CS, D	CS	CS			CS	CS
Kazakhstan			T1	D									T2	D						
Latvia													T1a, T2	CS, D, OTH						
Liechtenstein							CS	CS	CS	CS	CS	CS	CS	CS	CS	CS				
Lithuania									T3	PS			T1a, T1b, T2	CS, D, PS						
Luxembourg													T1, T2	CS, M, PS			T3	PS		
Malta													CS, T1, T2	CS, D						
Monaco													CS, T2	CS, D, OTH						
Netherlands			T2	CS			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				
Romania			T2	D, PS									T2	CS, D	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				
Sweden	T2	D	T2	D									T1, T2	CS, D, PS						
Switzerland							T2	D	T2	D	T2	D	T1a, T2	CS, D	T2	CS	T1a, T3	D, PS	T1a, T3	D, PS
Türkiye			T3	PS																
Ukraine													T1a, T2	CS, D						
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 (2020)

	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
							Dairy cattle	Non-dairy cattle	Mature dairy cattle	Other mature cattle	Growing cattle	Other								
		Methods	EF	CRF	FAO[b]	Difference	CH_4 IEF						CRF	FAO[b]	Difference		CRF	FAO[b]	Difference	
	(%)			(thousands of head)		(%)	(kg/head/yr)						(thousands of head)		(%)	(kg/head/yr)	(thousands of head)		(%)	(kg/head/yr)
IPCC default EF[c,d]							46-128	27-60				56				5-8				1.0-1.5
Australia	8.76	CS, T1, T2	CS, D	24 771	23 503	-5.12							66 670	63 529	-4.71	6.7	2 283	2 258	-1.11	1.6
Austria	5.07	T1, T2	CS, D	1 855	1 855	0.00	130	54					394	394	0.00	8.0	2 496	2 806	12.45	0.97
Belarus	8.74	T1, T2	CS, D	4 019	4 292	6.79	117	51					89	89	0.00	8.0	2 872	2 872	0.00	1.5
Belgium	3.79	T1, T2	CS, D	2 348	2 335	-0.52	128	46					124			8.0	6 310	6 218	-1.46	1.5
Bulgaria	3.03	T1, T2	CS, D	540	589	9.14			111	77	56		1 294	1 308	1.03	7.5	542	592	9.25	1.5
Canada	3.52	T1, T2	CS, D	11 750	11 265	-4.13	143	71					912	796	-12.76	8.0	14 043	13 970	-0.52	1.5
Croatia	4.11	T1, T2	CS, D	423	423	0.03			112	63	60		662	662	0.00	8.0	1 033	1 033	0.00	1.5
Cyprus	3.31	T1, T2	CS, D	83	78	-6.52	122	57					328			8.0	359	359	0.10	1.5
Czechia	2.73	T1, T2	CS, D	1 404	1 340	-4.56	159	59					204	204	0.00	8.0	1 499	1 546	3.12	1.5
Denmark (KP)	8.81	T1, T2	CS, D, OTH	1 499			157	41					200			6.7	13 163			1.0
Denmark (Convention)	8.49	T1, T2	CS, D, OTH	1 501	1 500	-0.04	157	41					298			8.1	13 163	13 391	1.74	1.0
Estonia	4.53	D, T1, T2	CS, D, OTH	253	253	0.00			156	59	32		75			8.0	317	317	-0.06	1.1
European Union (KP)	5.00			90 292			131	49					98 752			7.2	145 117			1.2
European Union (Convention)	5.00			90 220	86 077	-4.59	131	49					98 143	94 541	-3.67	7.2	145 078	151 376	4.34	1.2
Finland	4.35	CS, OTH, T1, T2	CS, D, OTH	846	835	-1.30	161	57					140	140	0.02	8.4	1 104	1 104	0.01	1.0
France (KP)	8.43	T2, T3	CS	17 816			127	53					6 923			13	13 245			0.74
France (Convention)	8.33	T1, T2, T3	CS, D	17 895	17 789	-0.59	127	53					6 928	7 301	5.39	13	13 313	13 737	3.19	0.74
Germany	3.28	T1, T2, T3	CS, D	11 302	11 302	0.00	141	48					1 780	1 484	-16.66	6.4	21 622	26 070	20.57	1.2
Greece	4.82	T1, T2	CS, D	519	539	3.79	130	62					8 931	8 260	-7.52	9.5	699	743	6.34	1.5
Hungary	3.34	T1, T2	CS, D	927	933	0.63	129	56					998	944	-5.40	8.0	2 831	2 850	0.67	1.5
Iceland	6.46	T1, T2	CS, D	72	81	12.45			110	74	43		609	401	-34.24	8.7	39	27	-31.22	1.5
Ireland	21.29	CS, T1, T2	CS, D	7 221	6 529	-9.58	122	48					5 287	3 877	-26.66	5.6	1 655	1 679	1.40	1.4
Italy	3.55	T1, T2	CS, D	5 993	6 400	6.79	136	48					7 034	7 034	0.00	7.5	8 543	8 543	0.00	1.5
Japan	0.66	CS, T1	CS, D	3 960	3 907	-1.34	100	60					20	15	-26.93	8.0	9 290	9 124	-1.79	1.4
Kazakhstan	6.37	T1, T2	CS, D	8 668	7 850	-9.44	102	52					20 448	17 750	-13.19	6.8	1 021	817	-20.00	1.00
Latvia	8.18	T1, T2	CS, D, OTH	399	399	0.02			148	83	29		92	92	-0.01	8.0	307	307	0.01	1.5
Liechtenstein	8.02	T2	CS	6.4					140	107	44		3.8			8.8	1.5			1.1
Lithuania	7.16	T1, T2	CS, D, OTH	645	630	-2.35	131	59					161	141	-12.73	10	566	580	2.61	1.3
Luxembourg	4.44	T1, T2	CS, D	191	191	-0.35						83	8.0	9.5	18.92	7.9	76	82	7.75	1.5
Malta	1.63	T1, T2	CS, D	14	14	-1.97						79	13	13	0.00	10	40	45	12.92	1.5
Monaco		NA	NA	NO			NO	NO					NO			NO	NO			NO
Netherlands	4.99	T1, T2, T3	CS, D	3 719	3 691	-0.75			137	78	34		954	710	-25.61	8.0	11 860	11 541	-2.69	1.5
New Zealand	36.60	T1, T2	CS, D	10 083	10 083	0.00	91	62					26 029	26 029	0.00	13	235	235	0.00	1.1
Norway	4.53	T1, T2	CS, D	822	869	5.77			150	86	57		1 279	2 225	73.88	12	764	785	2.83	1.5
Poland	3.43	T1, T2	CS, D	6 344	6 279	-1.02						78	288	278	-3.42	8.0	11 433	11 727	2.58	1.5
Portugal	6.21	T1, T2	CS, D	1 662	1 691	1.76	135	58					2 227	2 181	-2.06	9.9	2 241	2 259	0.83	1.1
Romania	6.57	T1, T2	CS, D	1 856	1 911	2.98	125	65					10 281	10 464	1.78	7.8	3 785	3 750	-0.90	1.3
Russian Federation	1.90	CS, T1, T2	CS, D	18 464	18 126	-1.83	86	57					21 791	20 655	-5.21	8.0	25 566	25 163	-1.57	1.2
Slovakia	2.61	T1, T2	CS, D	442	442	0.00	122	61					294	294	0.00	11	538	538	0.00	1.5
Slovenia	5.94	T1, T2	CS, D	486	486	0.00						75	82	114	38.72	8.0	229	229	0.00	1.5
Spain	5.85	CS, T2, T3	CS, D	6 676	6 636	-0.59	125	62					15 439	15 439	0.00	7.6	32 085	32 796	2.21	0.80
Sweden	6.35	CS, T1	CS, D	1 453	1 391	-4.27	147	50					501	501	0.00	8.0	1 431	1 383	-3.33	1.5
Switzerland	7.50	T2, T3	CS, M	1 515	1 515	-0.01			140	107	37		398	344	-13.75	9.1	1 448	1 240	-14.37	1.0
Türkiye	6.61	T1, T2	CS, D	17 965	17 965	0.00	84	47					42 127	42 127	0.00	5.1	0.99	0.99	0.00	1.0
Ukraine	2.34	T1, T2	CS, D	3 181	3 092	-2.80			113	69	46		848	659	-22.31	8.7	6 053	5 727	-5.39	1.5
United Kingdom of Great Britain and Northern Ireland (KP)	5.17	T1, T3	CS, D	9 429			124	55					33 427			5.0	5 069			1.5
United Kingdom of Great Britain and Northern Ireland (Convention)	5.16	T1, T3	CS, D	9 429	9 615	1.97	124	55					33 427	32 697	-2.18	5.0	5 069	5 148	1.57	1.5
United States of America	2.93	M, T1, T2	CS, D, M	99 617	93 793	-5.85						68	5 200	5 200	0.00	9.0	77 267	77 312	0.06	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, Cyprus, Czechia, Denmark (Convention), Denmark (KP), European Union (Convention), European Union (KP), Finland, Japan, Latvia, Netherlands, Portugal, Slovakia and Switzerland.

[b] Source of international statistics: FAOSTAT data, downloaded on 14 June 2022 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 (2020)

	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	1.06	CS, T2, T3	CS, D						5.8	0.34	23
Austria	0.75	T1, T2	CS, D	17	6.8					0.31	1.3
Belarus	0.71	T1, T2	CS, D	5.9	2.2					0.19	3.1
Belgium	1.12	T1, T2	CS, D	26	2.8					0.19	4.5
Bulgaria	0.63	T1, T2	CS, D			23	15	11		0.22	4.4
Canada	0.58	T1, T2	CS, D	39	3.7					0.28	4.8
Croatia	1.54	T2	CS, D			38	10	10		0.22	6.4
Cyprus	0.69	T1, T2	D	17	7.4					0.27	3.4
Czechia	0.31	T1, T2	CS, D	13	3.5					0.19	2.0
Denmark (KP)	5.26	CS, T2	CS, D	49	14					0.20	3.4
Denmark (Convention)	5.03	CS, T2	CS, D	49	14					0.19	3.4
Estonia	1.41	D, T1, T2, T3	CS, D			34	13	8.1		0.19	6.1
European Union (KP)	1.11			21	5.2					0.31	4.9
European Union (Convention)	1.11			21	5.2					0.30	4.9
Finland	0.93	T2	CS	32	6.6					0.25	3.3
France (KP)	0.97	T2	CS	11	3.3					0.35	4.1
France (Convention)	0.96	T2	CS	11	3.4					0.35	4.1
Germany	0.89	T2	CS, D	23	7.7					0.28	4.8
Greece	0.84	T1, T2	CS, D	12	3.6					1.0	16
Hungary	1.02	T1, T2	CS, D	30	10					0.29	3.5
Iceland	1.25	T1, T2	CS, D			31	3.2	12		0.73	6.0
Ireland	2.77	T1, T2	CS, D	11	5.1					0.50	6.5
Italy	1.09	T1, T2	CS, D	22	10					0.24	8.2
Japan	0.21	CS, T1	CS, D	60	2.4					0.28	0.63
Kazakhstan	0.25	T1, T2	CS, D	4.6	0.99					0.10	4.0
Latvia	0.85	T1, T2	CS, D			17	2.0	1.1		0.19	2.2
Liechtenstein	1.54	T2	D			29	19	5.8		1.2	4.6
Lithuania	1.15	T1, T2	CS, D	13.6	7.3					0.41	3.5
Luxembourg	0.71	T1, T2	CS, D						11	0.15	5.0
Malta	0.24	T1, T2	CS, D						7.7	0.19	0.50
Monaco		NA	NA	NO	NO					NO	NO
Netherlands	2.24	T1, T2	CS, D			38	6.8	7.8		0.19	5.7
New Zealand	2.06	T1, T2	CS, D	8.9	0.85					0.14	5.9
Norway	0.74	T1, T2	CS, D			31	13	5.3		0.57	2.7
Poland	0.33	T1, T2	CS, D						4.1	0.19	1.4
Portugal	1.29	T2	CS, D	26	1.9					0.33	7.5
Romania	0.57	T1, T2	CS, D	6.8	2.5					0.23	2.8
Russian Federation	0.27	CS, T1, T2	CS, D	3.7	2.9					0.19	5.6
Slovakia	0.23	T1, T2	CS, D	8.3	2.1					0.39	2.6
Slovenia	1.46	T1, T2	CS, D						16	0.24	3.7
Spain	2.64	T2	CS, D	37	4.1					0.28	7.0
Sweden	0.57	T1, T2	CS, D	9.3	3.8					0.19	1.4
Switzerland	1.31	T2, T3	CS, M			19	11	4.6		1.1	3.9
Türkiye	0.76	T1	D	20	1.0					0.13	3.8
Ukraine	0.31	CS, T1, T2	CS, D			4.1	2.7	1.3		0.24	2.9
United Kingdom of Great Britain and Northern Ireland (KP)	0.94	T1, T2	CS, D	38	7.0					0.13	4.1
United Kingdom of Great Britain and Northern Ireland (Convention)	0.94	T1, T2	CS, D	38	7.0					0.13	4.1
United States of America	1.00	M, T1, T2	CS, D, M						13	0.37	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, Cyprus, Czechia, Denmark (Convention), Denmark (KP), European Union (Convention), European Union (KP), Finland, Japan, Latvia, Netherlands, Portugal, Slovakia 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 (2020)

	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						47	0.12	CS, T2, T3	D			NA	0.081	0.004
Austria	107	52					0.71	T2	CS	0.80	0.48	0.067	0.086	0.003
Belarus	77	37					1.02	T1	D	0.50	0.21	0.073	0.076	0.005
Belgium	122	53					0.61	T2	D	0.72	0.55	0.017	0.030	0.001
Bulgaria			98	65	54		0.58	T1, T2	D			0.040	0.008	0.017
Canada	122	48					0.58	T1, T2	D	0.91	0.70	0.045	0.012	0.015
Croatia			109	64	36		0.60	T2	CS, D			0.021	0.009	0.006
Cyprus	96	39					0.79	T1	D	0.61	0.24	0.096	0.029	0.016
Czechia	109	59					0.38	T2	CS, D	0.58	0.32	0.038	0.048	0.004
Denmark (KP)	156	42					1.61	T2	D	0.95	0.37	0.029	0.058	0.007
Denmark (Convention)	156	42					1.54	T1, T2	CS, D	0.95	0.37	0.031	0.058	0.007
Estonia			140	59	28		0.63	T1, T2, T3	CS, D			0.061	0.007	0.005
European Union (KP)	118	52					0.60			0.56	0.27	0.017	0.051	0.004
European Union (Convention)	118	52					0.60			0.56	0.27	0.017	0.051	0.004
Finland	139	56					0.57	T2	D	0.90	0.44	0.059	0.034	0.007
France (KP)	117	60					0.60	T2	CS, D	0.40	0.18	0.022	0.004	0.001
France (Convention)	117	60					0.59	T2	CS, D	0.40	0.18	0.022	0.004	0.001
Germany	122	44					0.40	T2	CS, D	0.62	0.33	0.029	0.057	0.002
Greece	116	53					0.37	D	D	0.84	0.27	0.012	0.11	0.002
Hungary	132	53					0.69	T1, T2	CS, D	1.2	0.49	0.071	0.054	0.004
Iceland			98	60	29		0.40	T1, T2	CS, D			0.044	NO	0.004
Ireland	109	55					1.04	T2	CS, D	0.13	0.16	0.010	0.026	0.002
Italy	109	52					0.54	T2	CS, D	0.65	0.32	0.013	0.092	0.005
Japan	78	43					0.33	CS, T1	CS, D	1.5	0.86	IE	0.45	0.003
Kazakhstan	61	43					0.80	T1, T2	CS, D	0.67	0.47	0.043	0.57	0.029
Latvia			118	63	20		0.71	T1, T2	D			0.074	0.043	0.004
Liechtenstein			113	85	36		0.87	NA	NA			0.078	0.030	0.011
Lithuania	114	45					0.89	T1, T2	D	0.63	0.29	0.046	0.011	0.004
Luxembourg						75	0.31	T2	CS			0.015	0.037	0.010
Malta						100	0.78	T1, T2	CS, D			0.055	0.043	0.032
Monaco	NO	NO						NA	NA	NO	NO	NO	NO	NO
Netherlands			149	83	38		0.48	T1	CS			0.006	0.028	0.003
New Zealand	120	81					0.15	T1	CS	NO	NO	NO	0.15	0.001
Norway			133	93	44		0.31	T2	CS, D			0.020	0.013	0.002
Poland						76	0.78	T1, T2	CS, D			0.044	0.086	0.002
Portugal	119	56					0.38	T2	CS, D	0.46	0.041	0.006	0.006	0.004
Romania	83	44					0.96	T2	D	0.33	0.18	0.061	0.10	0.003
Russian Federation	100	25					0.36	T1	CS, D	0.66	0.13	0.074	0.030	0.007
Slovakia	115	43					0.40	T1, T2	CS	0.79	0.25	0.094	0.068	0.002
Slovenia						57	0.50	T1, T2	CS, D			0.054	0.031	0.002
Spain	113	57					0.60	T2	D	0.42	0.13	0.014	0.032	0.003
Sweden	137	42					0.71	CS, T2	CS, D	0.76	0.25	0.029	0.063	0.008
Switzerland			111	85	33		0.88	CS, T3	D			0.076	0.023	0.003
Türkiye	83	38					0.97	T1	D	0.55	0.25	0.067	NO	0.004
Ukraine			72	57	29		0.30	CS, T1, T2	CS, D			0.018	0.089	0.002
United Kingdom of Great Britain and Northern Ireland (KP)	114	44					0.69	T2	CS, D	0.54	0.58	0.003	0.16	0.007
United Kingdom of Great Britain and Northern Ireland (Convention)	114	44					0.69	T2	CS, D	0.54	0.58	0.003	0.16	0.007
United States of America						63	0.33	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, Cyprus, Czechia, Denmark (Convention), Denmark (KP), European Union (Convention), European Union (KP), Finland, Japan, Latvia, Netherlands, Portugal, Slovakia 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 (2020)

	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	1.75	1 513 790 387	0.003	0.009	0.004	0.010	2.0	14	0.59	499 606 183	0.003	479 987 587	0.011
Austria	T1	D	2.28	106 955 285	0.010	0.010	0.017	0.010	0.010	8.2	0.44	30 173 330	0.010	51 588 246	0.008
Belarus	T1	D	9.82	461 900 000	0.009	0.010	0.020	0.010	NE	8.0	1.68	83 075 160	0.010	313 176 512	0.008
Belgium	T1	D	2.41	157 210 793	0.010	0.010	0.019	0.010	0.010	8.0	0.65	35 408 492	0.010	149 459 202	0.008
Bulgaria	T1	D	6.25	364 335 000	0.010	0.010	0.013	0.010	0.010	8.0	1.73	35 672 119	0.010	194 456 985	0.008
Canada	T1, T2	CS, D	2.44	2 910 000 000	0.007	0.008	0.002	0.006	0.012	8.0	0.62	280 001 980	0.008	1 429	4 773
Croatia	T1	D	3.56	98 963 500	0.010	0.010	0.011	0.010	0.010	8.0	1.13	17 235 245	0.010	53 243 222	0.008
Cyprus	T1	CS, D	1.22	7 800 000	0.010	0.010	NO	0.010	NO	NO	0.20	3 721 665	0.010	NO	NO
Czechia	T1, T2	CS, D	2.46	285 436 000	0.010	0.010	0.019	0.010	NO	NO	0.74	48 076 623	0.010	578 235 858	0.002
Denmark (KP)	CS, T1, T2	D	9.44	251 866 800	0.010	0.010	0.018	0.010	0.010	7.4	1.24	38 933 840	0.010	149 302 000	0.005
Denmark (Convention)	CS, T1, T2	CS, D	9.15	252 051 397	0.010	0.010	0.017	0.010	0.010	7.4	1.21	39 070 090	0.010	152 764 703	0.005
Estonia	D, T1	D	5.14	41 486 000	0.010	0.010	0.016	0.010	NO	8.0	1.21	8 300 084	0.010	28 722 108	0.008
European Union (KP)			3.49	10 998 008 509	0.009	0.009	0.014	0.010	0.007	6.7	0.79	1 907 493 185	0.010	6 151 025 861	0.007
European Union (Convention)			3.50	10 986 600 509	0.009	0.009	0.014	0.010	0.007	7.1	0.79	1 905 299 539	0.010	6 143 234 480	0.007
Finland	T1, T2	CS, D	6.65	139 316 000	0.010	0.010	0.017	0.010	0.010	9.8	0.82	9 568 442	0.010	92 451 918	0.008
France (KP)	T1, T2	CS, D	6.11	2 037 727 458	0.010	0.010	0.019	0.010	NO	3.4	1.32	284 564 511	0.010	1 092 929 888	0.007
France (Convention)	T1, T2	CS, D	6.02	2 041 956 917	0.010	0.010	0.019	0.010	NO	3.4	1.30	285 491 619	0.010	1 095 875 795	0.007
Germany	T1, T2	CS, D	1.93	1 362 150 667	0.006	0.007	0.019	0.006	0.010	6.2	0.64	246 716 251	0.010	988 620 694	0.007
Greece	T1	D	3.07	202 945 000	0.010	0.010	0.010	0.010	NE	8.0	1.10	68 791 443	0.010	143 262 147	0.008
Hungary	T1, T2	D	5.72	443 230 000	0.010	0.010	0.016	0.010	0.010	NO	0.43	35 911 806	0.010	29 461 106	0.008
Iceland	T1, T1b, T2	CS, D	4.65	11 408 000	0.010	0.010	0.011	0.010	NO	0.55	0.83	2 193 647	0.010	7 791 381	0.008
Ireland	T1	CS, D	9.00	379 519 000	0.012	0.010	0.009	0.010	0.010	4.3	0.98	51 612 828	0.010	92 476 656	0.008
Italy	CS, T1	CS, D	2.22	577 450 900	0.010	0.010	0.011	0.010	NA	8.0	0.62	137 443 577	0.010	489 525 669	0.008
Japan	CS, T2	CS, D	0.30	374 702 711	0.007	0.006	0.009	0.010	0.004	1.2	0.20	133 937 574	0.014	282 468 071	0.011
Kazakhstan	T1, T2	CS, D	3.82	56 798 510	0.012	0.010	0.015	0.010	0.010	NO	0.48	162 738 002	0.010	250 037 210	0.008
Latvia	T1	D	9.39	84 300 000	0.010	0.010	0.019	0.010	NO	3.7	1.71	13 263 249	0.010	33 308 104	0.008
Liechtenstein	T1b	D	2.48	163 829	0.010	0.010	0.019	0.010	NO	8.0	0.80	79 533	0.026	128 662	0.008
Lithuania	T1, T2	D	10.51	199 000 000	0.010	0.010	0.019	0.010	NO	8.0	2.23	20 971 479	0.010	100 046 228	0.008
Luxembourg	T1, T2	CS, D	1.73	13 092 080	0.010	0.010	0.020	0.010	0.010	NO	0.51	3 259 894	0.010	8 701 516	0.008
Malta	T1	D	0.84	586 140	0.010	0.010	NO	0.010	0.010	NO	0.31	535 720	0.010	1 136 509	0.008
Monaco				NO	NO	NO	NO	NO	NO	NO		NO	NO	NO	NO
Netherlands	T1, T1b, T2	CS, D	2.62	244 389 397	0.011	0.008	0.031	0.014	NO	4.4	0.36	42 635 351	0.012	99 907 421	0.008
New Zealand	T1, T2	CS, D	8.18	470 000 000	0.007	0.004	0.005	0.010	0.010	8.0	1.83	197 580 113	0.010	147 170 206	0.008
Norway	T1	CS, D	2.84	105 884 083	0.010	0.010	0.016	0.010	NO	12	0.46	12 533 733	0.012	44 754 698	0.007
Poland	T1, T3	CS, D	3.39	1 033 500 000	0.010	0.010	0.020	0.010	0.010	8.0	0.79	199 529 126	0.010	580 531 225	0.008
Portugal	T1, T2	CS, D	3.11	105 329 980	0.010	0.010	0.018	0.010	IE	NO	0.78	20 537 722	0.014	58 197 798	0.012
Romania	T1	D	5.90	468 891 000	0.010	0.010	0.013	0.009	NO	8.0	1.86	133 730 902	0.010	404 932 495	0.008
Russian Federation	CS, T1, T2	CS, D	2.63	1 916 417 581	0.014	0.010	0.018	0.010	0.010	8.0	0.44	509 496 325	0.010	1 909 154 482	0.008
Slovakia	T1, T2	CS, D	3.00	127 676 520	0.010	0.010	0.016	0.010	0.010	NE	0.52	19 521 711	0.010	28 885 778	0.008
Slovenia	T1, T2	D	2.09	27 692 000	0.010	0.010	0.017	0.010	0.010	8.0	0.69	8 382 182	0.010	19 887 079	0.008
Spain	CS, T1, T2	D	3.87	1 059 299 000	0.010	0.010	0.017	0.010	NA	NO	0.65	253 915 798	0.010	169 096 249	0.007
Sweden	CS, T1, T2	CS, D	6.47	215 171 000	0.010	0.010	0.017	0.010	0.010	13	0.61	20 520 821	0.010	53 369 428	0.008
Switzerland	T1, T3	CS, D	2.56	41 074 538	0.010	0.010	0.019	0.010	0.010	8.0	0.91	21 754 693	0.026	36 299 754	0.008
Türkiye	T1	D	4.64	2 052 685 162	0.010	0.010	0.013	0.010	NO	8.0	0.59	606 312 133	0.010	71 970 053	0.008
Ukraine	CS, T1, T2	D	7.91	1 946 392 730	0.010	0.010	0.019	0.010	0.010	8.0	2.11	331 242 458	0.010	1 468 295 166	0.008
United Kingdom of Great Britain and Northern Ireland (KP)	T1, T2	CS, D	2.30	951 280 989	0.007	0.007	0.003	0.010	0.010	9.5	0.58	116 365 328	0.014	451 498 951	0.008
United Kingdom of Great Britain and Northern Ireland (Convention)	T1, T2	CS, D	2.29	951 280 989	0.007	0.007	0.003	0.010	0.010	9.5	0.58	116 365 328	0.014	451 498 951	0.008
United States of America	OTH, T1	D, OTH	4.54	11 621 291 016	0.012	0.010	0.007	0.008	0.008	9.8	0.74	2 358 259 132	0.010	9 541 863 759	0.008

[a] The national total includes indirect CO_2 emissions from the atmospheric oxidation of CH_4, CO and NMVOCs for the following Parties: Canada, Cyprus, Czechia, Denmark (Convention), Denmark (KP), European Union (Convention), European Union (KP), Finland, Japan, Latvia, Netherlands, Portugal, Slovakia 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 (2020)

	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	T2, T3	CS, D, M	T2	CS	T2	CS	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	M, T1, T3	CS, D, M	T1, T2	CS, D	T1, T2	CS, D	M, T1, T2, T3	CS, D, M	T2	CS	M, T2	CS			T1	D	T1	D
Croatia	T1, T2	CS, D	T1	D	T1	D	T1, T2, T3	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, T3	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	CS, D	T1	D
Estonia	T1, T2	CS, D, OTH	T1, T2	D	T1, T2	D	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	T1, T2	CS, D	T1, T2	CS, D	T1, T2, T3	CS, D			T1	CS, D	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, D	T2	CS, D	T2	CS, D	T2	CS, D	T2	CS, D	T2	CS, D	T2	CS, D	T2	CS, D	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	CS, D	T1, T2	CS, D	D, T1, T2, T3	CS, D	T1, T2	CS, D	T2	CS, D	T1, T2, T3	CS, D	T1, T2	CS, D	T2	CS, D
Ireland	CS, T1, T2, T3	CS	D, T1	CS, D	D, T1	CS, D	CS, D	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	T1, T2	CS, D	T1, T2, T3	CS, D	T1	CS, D	T1, T2	CS, D
Kazakhstan	T2	CS	T2	D	T2	D	T2	CS					T2	CS	T1	D	T1	D
Latvia	T1, T2	CS, D	T1, T2	D	T1, T2	D	T2, T3	CS	T1	D	T1	CS	T1, T2, T3	CS, D	T1, T2	CS, 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, T2	CS, D
Luxembourg	T1, T3	CS, D					T1	CS, D			T1	D	T1	CS, D			T1	D
Malta	T1	D, OTH					T1	D, OTH			T1	D	T1	D, OTH				
Monaco																		
Netherlands	T1, T2	CS, D	T1	CS, D	T1	CS, D	CS, T1	CS, D			T2	CS, D	CS, T1, T2	CS, D	CS	D	CS, T2	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, 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, T1, 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	CS, D	T1	D	T1	D	T1, T2	CS, 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, T	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	T1, T2	CS, D	T1, T2	D	T1, T2	D	T1, T2	CS, D	T1	D	T1	D	T1, T2	CS, D	T1, T2	D	T1, T2	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
Türkiye	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, T2, T	CS, D	D	CS	D, T1	CS, D	CS, D, T1, T3	CS, D	D	CS	D	CS, D	CS, D, T1, T2, T3	CS, D	D	CS	D	CS, D
United Kingdom of Great Britain and Northern Ireland (Convention)	CS, D, T1, T2, T	CS, D	D	CS	D, T1	CS, D	CS, D, T1, T3	CS, D	D	CS	D	CS, D	CS, D, T1, T2, T3	CS, D	D	CS	D	CS, D
United States of America	T2, T3	CS	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 (2020)

	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, D, M	T2, T3	CS, D	T3	CS	T2, T3	CS, M	CS	CS	CS, T2	CS							T2, T3	D, M
Austria	T2, T3	CS	T2	CS	T2	CS	T2, T3	CS			T2, T3	CS	T2, T3	CS					T2, T3	CS, D
Belarus	T1	D			T1	D	D	D											T2	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	M, T2, T3	CS, M	M, T2	CS	T2	D	M, T2, T3	CS, M	T2	CS	T2	CS							M, 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							T1	D
Estonia	T2	CS, D, OTH	T2	CS	T2	CS	T2	CS, D, OTH			T1	D	T2	CS, D, OTH			T1	D	T2	CS, D
European Union (KP)																				
European Union (Convention)																				
Finland	T1, 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	CS, D	T2	CS, D	T2	CS	T2	CS, D	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	D
Iceland	RA, T1, T2	CS, D	RA, T1, T2	CS, D	T2	CS, D	T1, T2, T3	CS			CS	D			T2	CS, D	T2	CS, 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												
Latvia	T1, T2	CS, D	T1, T2	CS, D	T2	CS	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	T1, T2	CS, D			T1, T2	CS, D	T1, T2	D
Luxembourg	T1	CS, D			T1	D	T1	CS, D			T1	D							T1	CS
Malta	T1	D, OTH					T1	D, OTH					T1	OTH			T1	D		
Monaco							T1, T2	D			T1	D								
Netherlands	T1, T2	CS, D			T2	CS, D	CS, T1, T2	CS, D			T2	CS, D	CS, T1, T2	CS, D			T1, T2	CS, D	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	D							T2	D
Poland	T1	D			T1	D	T1, T2	CS, D			T1	D							T2	D
Portugal																			D	D
Romania	T1, T2	CS, D			T1	D	T1, T2	CS, D			T1	D	T1, T2	CS, D			T3	D	T2	D
Russian Federation	T1	CS, D	T1	CS, D	T1	D	CS	CS			T1	D					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							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
Türkiye	T1, T2	CS, D			T1	D	T1	D					T1	D					T2	CS, D
Ukraine	T1	D	T1	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, T2	CS, D	T2	CS, 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, T2	CS, D	T2	CS, D	D	CS	CS, D, T1, T3	CS, D	D	CS	D	CS, D							CS, T3	CS
United States of America	T1, T2	CS, D	T1	D	T1	D	CS, 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 (2020)[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	0.078	–0.032	0.045	0.016	0.007	0.026	IE, NA	0.68	IE, NO	0.68	0.07	0.011	-0.132	0.000
Austria	2.3	-2.1	0.23	0.006	IE, NE	-0.18	NO	1.7	-0.52	1.2	0.016	1.2	0.71	NO
Belarus	1.8	-0.58	1.2	0.032	0.049	0.27	NE	NE	NE	NE	NE	NE	NE, NO	NE
Belgium	0.68	NO	0.68	NA	NA	NA	NO	2.1	–0.000	2.1	0.057	0.23	1.2	NO
Bulgaria	0.50	IE, NE	0.50	0.079	NA	NA	NO	2.4	-0.17	2.2	NA, NO	0.51	-0.72	NO
Canada	2.6	-2.5	0.12	0.12	-0.11	0.032	IE, NA	3.2	-1.2	2.0	0.22	0.25	-0.20	IE, NO
Croatia	1.8	-1.1	0.69	NA	NA	NA	NO	1.2	-0.023	1.2	0.016	0.23	-0.25	NO
Cyprus	0.28	–0.052	0.23	NO	NO	NO	NO	1.9	-0.52	1.4	0	0.49	0.12	NO
Czechia	2.7	-4.9	-2.2	0.15	0.41	0.027	NO	2.4	NO	2.4	0.038	0.33	0.27	NO
Denmark (KP)	0.15	IE	0.15	0.070	0.36	NA	-1.3	2.8	-0.16	2.7	0.007	0.312	0.16	-1.3
Denmark (Convention)	0.15	IE, NA, NO	0.15	0.070	0.36	NA, NO	-1.3	2.8	-0.16	2.7	0.007	0.312	0.16	-1.3
Estonia	IE	-0.12	–0.12	0.015	NA	0.16	-0.16	1.4	IE	1.4	0.006	0.30	0.042	-0.34
European Union (KP)	1.3	-0.85	0.42	0.040	0.003	0.070	-0.33	1.9	-0.77	1.1	0.027	0.21	0.17	-1.3
European Union (Convention)	1.3	-0.85	0.42	0.040	0.003	0.070	-0.33	1.9	-0.78	1.1	0.027	0.21	0.17	-1.3
Finland	1.7	-1.4	0.36	IE	IE	0.090	-0.17	1.3	-0.23	1.1	NA	IE, NA	0.047	-1.2
France (KP)	1.6	-1.3	0.32	–0.018	NA	NA	NO	1.3	-0.27	1.0	0.051	0.27	0.067	NO
France (Convention)	1.5	-1.2	0.31	–0.017	NA	NA	NO	1.3	-0.27	1.0	0.051	0.27	0.067	NO
Germany	0.75	IE	0.7	0.095	–0.012	0.41	-2.7	1.0	-1.5	–0.51	0.003	0.47	0.21	-2.7
Greece	0.18	IE, NO	0.18	NA, NO	NA, NO	NA, NO	NA, NO	0.35	-0.25	0.10	NE, NO	NE, NO	NE, NO	NO
Hungary	0.77	IE, NO	0.77	0.029	NE	NE	-2.6	1.4	–0.066	1.4	0.045	0.28	0.11	IE, NO
Iceland	0.39	IE	0.39	IE, NO	NA	NA	-0.37	1.5	–0.014	1.5	IE, NA, NO	0.14	0.40	-0.37
Ireland	8.0	-7.3	0.70	IE	–0.032	-0.052	-1.6	7.1	-4.5	2.6	IE, NO	0.74	0.087	-1.6
Italy	2.4	-1.6	0.80	0.007	0.011	NA, NO	NO	2.7	-1.8	0.92	0.007	0.012	0.18	NO
Japan	0.61	IE, NA	0.61	–0.016	0.002	0.021	NO	3.0	–0.003	3.0	0.65	0.28	0.15	NO
Kazakhstan	0.11	NO	0.11	0.012	0.011	0.005	NO	NO	NO	NO	NO	NO	NO	NO
Latvia	2.9	-2.7	0.25	0.12	NA	NA	-0.52	0.28	IE, NA, NO	0.28	0.085	0.10	NA	-0.52
Liechtenstein	2.4	-2.0	0.38	0.026	-0.043	NO	NO	1.3	-1.3	0.012	NO	NO	NO	NO
Lithuania	0.65	IE	0.65	0.10	NA	NE	IE	1.7	IE	1.7	NO	0.13	0.56	IE
Luxembourg	3.1	-2.2	1.0	0.10	NO	NO	NO	3.1	–0.030	3.1	0.33	0.96	1.1	NO
Malta	0.02	NA	0.016	NA	NA	NA	NO	0.18	NO	0.18	NO	1.2	NO	NO
Monaco	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
Netherlands	3.3	-2.0	1.3	0.13	0.14	NA	-0.92	4.0	-0.53	3.5	NE	NE	0.013	-0.94
New Zealand	1.6	-1.2	0.37	0.075	–0.007	0.000	-0.17	5.1	-0.84	4.2	0.34	0.28	-0.61	-0.68
Norway	1.1	-0.64	0.43	0.021	0.11	0.003	-0.49	0.93	-0.41	0.51	1.2	1.8	0.059	-0.67
Poland	0.40	IE	0.40	0.14	NO	0.094	-0.68	0.9	-0.053	0.87	NA, NO	NA, NO	0.25	-0.74
Portugal	2.0	-1.4	0.56	IE	–0.002	–0.005	NO	2.3	-0.73	1.5	IE	0.083	0.36	NO
Romania	1.7	-0.78	0.90	NE	NE	NE	-2.6	1.7	IE, NO	1.7	0.066	IE, NO	1.9	NO
Russian Federation	0.32	-0.10	0.22	0.018	0.006	0.027	-0.71	0.024	–0.000	0.024	0.005	0.000	0.003	NA, NO
Slovakia	2.5	-1.6	0.93	0.080	NA	NA	NO	1.5	NO	1.5	0.080	0.42	1.1	NO
Slovenia	0.82	IE	0.82	0.18	NA	NA	NO	2.8	-1.5	1.3	0.20	0.14	0.10	NO
Spain	0.52	IE	0.52	NA	NA	NA	NO	1.3	IE, NO	1.3	0.054	0.13	0.48	NO
Sweden	0.30	IE	0.30	0.060	–0.035	0.13	-0.36	0.59	IE	0.59	0.047	0.35	-0.064	-0.87
Switzerland	2.9	-2.3	0.55	0.013	–0.074	0.002	-0.078	1.4	-0.82	0.60	0.15	0.68	1.2	-0.078
Türkiye	1.1	-0.54	0.59	NO	NO	NO	NO	0.24	–0.006	0.23	NO	0.19	0.80	NO
Ukraine	1.6	-0.76	0.81	NA	NA	NA	-0.68	0.48	–0.004	0.47	NA	0.052	0.81	NO
United Kingdom of Great Britain and Northern Ireland (KP)	4.8	-4.0	0.79	0.30	0.039	0.39	–0.004	1.1	-0.21	0.85	0.030	0.029	-0.83	-2.1
United Kingdom of Great Britain and Northern Ireland (Convention)	4.8	-4.0	0.79	0.30	0.039	0.39	–0.004	1.1	-0.21	0.85	0.030	0.029	-0.83	-2.1
United States of America	0.46	IE	0.46	0.098	0.002	0.004	–0.037	17 081.9	IE	17 081.9	3 023.2	5112.4	294	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 (2020)[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	0.002	IE	0.002	NA	–0.008	IE	0.001	IE, NA, NO	0.001	–0.026	-0.17	-12.5
Austria	0.037	-0.038	–0.001	NO	0.015	NO	0.29	-0.28	0.015	–0.017	-0.98	NO
Belarus	0.040	–0.079	–0.038	NA, NO	NA	-5.0	NE	NE	NE	NA, NE	NE, NO	-5.0
Belgium	0.000	-0.001	–0.000	NO	–0.014	-10	NO	-0.047	-0.047	–0.003	-1.3	NO
Bulgaria	0.018	-0.027	–0.009	NA	0.052	-7.9	0.17	-0.27	-0.10	NA, NE, NO	-0.57	NO
Canada	0.008	–0.007	0.000	–0.009	0.086	-5.0	NE, NO	-1.4	-1.4	-2.0	2.0	IE, NE, NO
Croatia	0.002	-0.06	–0.054	NO	–0.011	-10	0.12	-0.017	0.10	NO	-0.92	NO
Cyprus	0.88	-0.74	0.15	NO	NO	NO	0.33	-0.33	-0.004	-0.034	-0.18	NO
Czechia	0.001	NO	0.001	NO	0.001	NO	0.005	-0.25	-0.24	–0.013	-0.26	NO
Denmark (KP)	0.058	-0.073	–0.015	NA	0.011	-7.5	0.81	-0.90	-0.086	-0.30	–0.080	IE, NA
Denmark (Convention)	0.058	-0.073	–0.015	NA	0.011	-7.5	0.81	-0.90	-0.086	-0.30	–0.080	–0.179
Estonia	IE	–0.003	–0.003	NE	0.080	-6.1	IE, NO	-0.080	-0.080	–0.103	-0.45	-6.1
European Union (KP)	0.040	–0.030	0.010	0.000	0.031	-6.5	0.20	-0.27	-0.067	–0.013	-0.64	-6.2
European Union (Convention)	0.040	–0.030	0.010	0.000	0.031	-6.4	0.20	-0.27	-0.066	–0.013	-0.64	-6.2
Finland	0.000	–0.000	0.000	IE	-0.12	-6.5	0.11	-0.97	-0.86	–0.005	-0.46	-6.8
France (KP)	0.075	–0.077	–0.002	NA	0.13	IE	0.020	-0.29	-0.27	–0.020	-1.1	NO
France (Convention)	0.075	–0.077	–0.002	NA	0.13	IE	0.020	-0.29	-0.27	–0.020	-1.1	NO
Germany	0.013	–0.013	–0.000	IE, NA, NO	-0.001	-9.4	0.36	-0.56	-0.20	IE, NO	-0.99	-9.2
Greece	0.068	–0.038	0.030	NO	NO	-10	NO	-0.024	-0.024	NO	-1.3	NO
Hungary	0.007	–0.007	–0.000	NO	0.017	NO	0.11	-0.16	-0.043	-0.058	-0.74	NO
Iceland	NA	NA	NA	NA	0.15	-7.9	0.11	-0.77	-0.67	IE, NA, NO	0.10	-7.9
Ireland	0.013	–0.011	0.002	NO	0.039	NO	NO	NO	NO	NO	NO	NO
Italy	0.063	-0.10	–0.040	NA	0.074	-10	NO	-0.15	-0.15	NO	-0.24	NO
Japan	IE	–0.016	–0.016	NA	-0.23	-1.9	0.20	-0.47	-0.27	-0.14	IE	-2.8
Kazakhstan	0.11	NO	0.11	IE	-0.36	NO	NO	NO	NO	NO	NO	NO
Latvia	0.010	–0.002	0.009	–0.000	NA	-4.8	E, NA, NE, NO	-0.016	-0.016	-0.14	-0.008	-4.8
Liechtenstein	NO	NO	NO	NO	NO	-9.5	0.34	-0.32	0.021	–0.005	-0.25	-9.5
Lithuania	0.041	–0.050	–0.009	NA	0.23	IE	IE, NE, NO	-0.10	-0.10	-0.049	-0.23	IE, NO
Luxembourg	0.019	–0.034	–0.015	NO	0.001	NO	0.19	-0.24	-0.050	–0.003	-0.48	NO
Malta	0.040	NA, NO	0.040	NA, NE	–0.007	NO	0.025	-0.13	-0.10	NE, NO	0.089	NO
Monaco	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
Netherlands	NA	NA	NA	NA	NA	-3.5	0.55	-0.77	-0.22	–0.012	-0.47	-3.6
New Zealand	0.030	0	0.030	0	–0.000	-9.9	0.43	-0.065	0.36	–0.000	-0.79	-9.9
Norway	0.000	NO	0.000	NO	0.017	-7.9	0.19	-1.2	-0.98	-2.4	–0.66	-7.9
Poland	0.034	IE	0.034	NA	–0.008	-1.0	NO	NO	NO	NO	-0.11	-1.0
Portugal	0.031	-0.013	0.017	NO	0.001	NO	0.16	-0.38	-0.22	–0.027	-0.67	NO
Romania	0.086	-0.047	0.039	NA	0.26	-10.0	0.42	-0.23	0.196	–0.000	–0.063	NO
Russian Federation	0.014	-0.001	0.012	NO	NO	-5.9	NO	NO	NO	NO	-1.6	NO
Slovakia	0.21	-0.017	0.19	NA	0.015	NE	NA, NO	-0.021	-0.021	–0.003	-0.63	NE, NO
Slovenia	0.10	-0.10	–0.004	0.001	0.003	-10	0.30	-0.82	–0.52	–0.026	-0.64	NO
Spain	0.027	IE	0.027	NA	0.027	NO	0.14	–0.071	0.066	–0.007	-0.37	NO
Sweden	0.026	IE	0.026	0.001	0.021	-6.1	0.23	-0.07	0.15	-0.24	-0.23	-0.46
Switzerland	0.033	NO	0.033	NO	0.25	-9.5	0.12	-0.02	0.095	–0.001	-0.21	-9.0
Türkiye	0.001	IE	0.001	NO	0.000	-0.01	0.16	-0.47	-0.31	–0.10	-0.24	NO
Ukraine	0.044	–0.035	0.009	NA	-0.21	-5.0	NA, NO	-0.37	-0.37	NA, NO	0.84	NO
United Kingdom of Great Britain and Northern Ireland (KP)	0.000	0.000	0.000	NA	-0.34	-8.2	0.074	–0.000	0.074	IE, NO	-1.2	-5.1
United Kingdom of Great Britain and Northern Ireland (Convention)	0.000	0.000	0.000	NA	-0.34	-8.2	0.074	–0.000	0.074	IE, NO	-1.2	-5.1
United States of America	NE	NE	NE	NE	0.10	-14	IE, NE	–0.704	–0.704	-0.28	-0.073	-15

[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 (2020)[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	0.014	–0.008	0.006	0.001	–0.000	IE, NA	0.001	-0.35	-0.35	-0.14	-0.22	-8.7
Austria	NA	NA	NA	NO	0.002	-6.4	0.27	-0.87	-0.60	-0.36	0.92	NO
Belarus	NA	NA	NA	NA	NA	IE	NE	NE	NE	NE	NE, NO	IE, NE
Belgium	NO	NO	NO	NO	–0.10	-1.9	NO	-1.2	-1.2	–0.113	1.1	NO
Bulgaria	0.022	-0.022	0.000	NA, NE	-0.008	-6.1	0.097	NO	0.097	NA, NO	0.64	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	0.043	-0.067	-0.024	NO	1.0	NO
Cyprus	1.5	-1.2	0.25	NO	NO	NO	0.39	-0.39	-0.001	-0.044	0.019	NO
Czechia	NO	NO	NO	NO	0.091	NO	0.11	–0.062	0.047	–0.006	0.44	NO
Denmark (KP)	0.81	-1.3	-0.44	NA	IE	-6.4	0.23	-0.34	-0.11	–0.014	0.011	-9.7
Denmark (Convention)	0.15	-0.24	-0.084	NA, NO	IE, NA, NO	-5.7	0.23	-0.34	-0.11	–0.014	0.011	-9.7
Estonia	NO	NO	NO	NO	NA	-0.25	0.14	-0.46	-0.31	-0.15	0.44	-1.5
European Union (KP)	0.099	–0.087	0.012	0.001	0.034	-2.5	0.17	-0.23	-0.066	–0.015	0.61	-4.7
European Union (Convention)	0.11	–0.096	0.013	0.002	0.036	-3.1	0.17	-0.24	-0.069	–0.015	0.61	-4.7
Finland	0.22	-0.039	0.18	NE	NA	-3.5	0.081	-0.34	-0.25	-0.001	0.13	-3.5
France (KP)	0.14	-0.11	0.030	NA	0.000	IE	0.12	-0.23	-0.10	–0.022	0.91	NO
France (Convention)	0.14	-0.10	0.044	NA	0.000	IE	0.12	-0.23	-0.10	–0.022	0.91	NO
Germany	0.50	-0.52	–0.018	IE	0.008	-7.4	0.75	-0.68	0.070	IE, NO	1.4	-7.7
Greece	NO	–0.000	–0.000	NO	NO	NO	NO	-0.030	-0.030	0.000	0.71	NO
Hungary	NA	NA	NA	NA	0.000	NO	0.060	-0.31	-0.25	–0.080	0.79	NO
Iceland	0.001	IE, NA	0.001	0.000	0.000	-5.7	0.065	IE, NA	0.065	0.001	0.50	-5.7
Ireland	NO	NO	NO	NO	0.16	-6.8	0.016	-0.081	-0.064	-0.015	0.067	-3.9
Italy	0.46	-0.39	0.065	0.004	0.025	2.5	NO	NO	NO	NO	1.2	NO
Japan	NA	NA	NA	NA	-0.16	-0.13	0.35	-0.38	-0.030	-0.11	IE, NO	-0.19
Kazakhstan	NO	-0.001	–0.001	0.000	0.016	NO	NO	NO	NO	NO	NO	NO
Latvia	0.10	–0.019	0.084	0.012	NA	-4.4	0.025	-0.056	-0.031	-0.10	NA, NO	-3.0
Liechtenstein	0.067	–0.065	0.002	NO	0.021	-7.7	0.36	-1.2	-0.82	-0.30	0.22	-9.5
Lithuania	NA	NA	NA	NA	NE	IE	0.026	IE, NE, NO	0.026	0.036	0.31	IE, NO
Luxembourg	NA	NA	NA	NA	NA	NA	0.43	-0.39	0.037	–0.010	0.63	NO
Malta	NE, NO	NE, NO	NE, NO	NE, NO	NE, NO	NO	0.81	NO	0.81	NE, NO	–0.12	NO
Monaco	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
Netherlands	0.041	-0.032	0.009	NA	0.004	-4.1	0.67	-0.61	0.062	-0.069	0.71	-3.8
New Zealand	0.007	–0.004	0.003	–0.000	–0.001	-2.2	0.12	-2.2	-2.1	-0.28	0.57	-1.8
Norway	0.013	-0.004	0.009	NO	–0.001	-3.6	1.1	-1.8	-0.65	-2.8	0.088	-3.6
Poland	NA	NA	NA	NA	–0.001	-0.25	0.18	IE, NO	0.18	NO	0.73	-0.25
Portugal	NO	NO	NO	NO	0.21	NO	0.057	-0.25	-0.20	–0.011	-0.44	NO
Romania	0.015	-0.003	0.012	NA	0.21	2.50	0.11	-0.22	-0.10	–0.001	0.12	NO
Russian Federation	NA	NA	NA	NA	NA, NO	-5.8	0.014	NA, NO	0.014	0.061	0.53	-6.8
Slovakia	NO	NO	NO	NO	NA	NO	0.007	–0.024	–0.017	–0.004	0.69	NO
Slovenia	0.36	-0.14	0.22	0.056	0.005	NO	0.16	-0.51	-0.34	-0.050	0.58	NO
Spain	NE	NE	NE	NA	NE	NO	IE, NO	-1.8	-1.8	-0.18	–0.13	NO
Sweden	0.21	IE	0.21	0.16	-0.045	-1.7	0.10	-0.92	-0.82	-0.25	0.016	NO
Switzerland	0.039	–0.020	0.019	NO	–0.063	-9.1	0.14	-0.84	-0.70	-0.20	0.37	-8.9
Türkiye	NA	NA	NA	NA	NA	-0.003	0.006	-2.5	-2.5	-0.29	-0.13	NO
Ukraine	NA, NO	NA, NO	NA, NO	NA, NO	0.006	-0.25	NA	NA	NA	NA	0.56	NO
United Kingdom of Great Britain and Northern Ireland (KP)	0.002	–0.004	–0.001	NA	0.13	-0.59	0.001	-0.11	-0.11	–0.014	0.69	-2.3
United Kingdom of Great Britain and Northern Ireland (Convention)	0.002	–0.004	–0.001	NA	0.13	-0.59	0.001	-0.11	-0.11	–0.014	0.69	-2.3
United States of America	IE	0.000	0.000	-0.002	0.003	-3.4	IE, NE	-0.18	-0.18	-0.058	0.60	-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

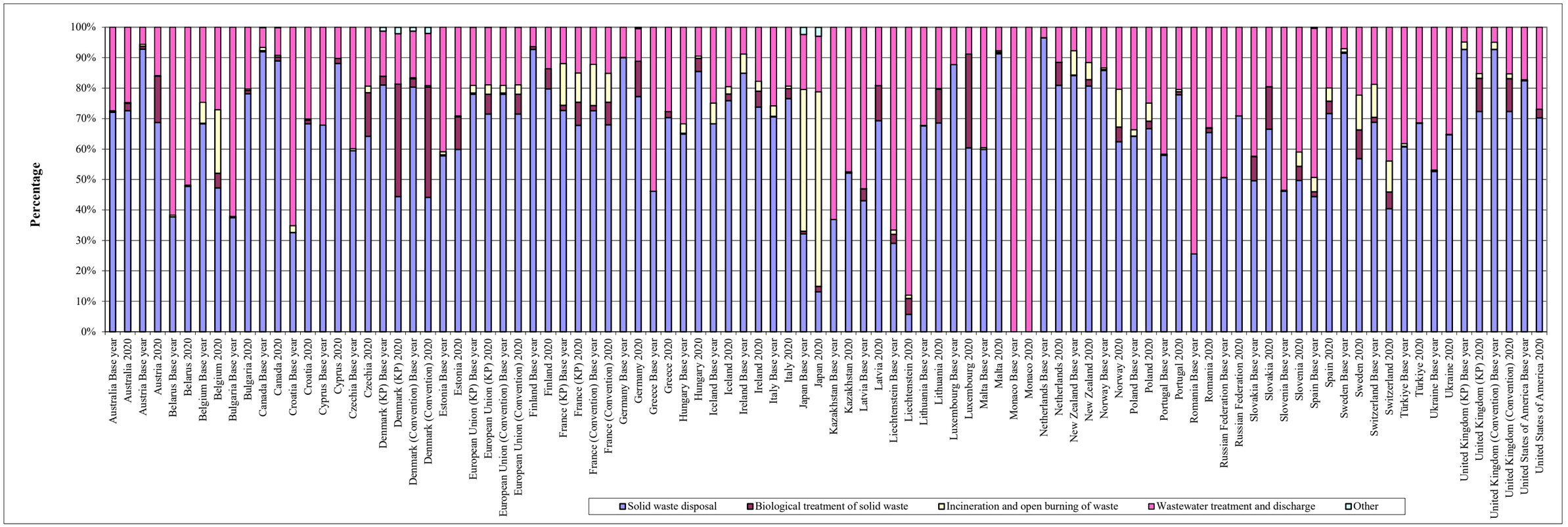
Land Area (2020)

Area (kha)	CRF						Total	FAO[a]	difference	FAO[a]	difference
	Forest land	Cropland	Grassland	Wetlands	Settlements	Other land		Total country area	%	Forest	%
Australia	147 876	40 005	519 780	734	507	60 692	769 594	774 122	0.59	134 005	-9.38
Austria	4 058	1 399	1 303	154	577	897	8 387	8 388	0.01	3 896	-4.00
Belarus	9 828	5 760	2 524	148	925	483	19 668	20 760	5.55	8 753	-10.93
Belgium	708	964	627	56	699	NO	3 053	3 053	0.01	689	-2.61
Bulgaria	3 919	3 685	2 560	232	537	168	11 100	11 100	0.00	3 880	-1.00
Canada	225 545	47 322	7 208	494	1 028	NE, NO	281 598	987 975	250.85	346 965	53.83
Croatia	2 387	1 526	1 153	75	290	231	5 662	8 807	55.54	1 937	-18.88
Cyprus	160	251	129	4.2	67	2.9	614	925	50.66	173	8.17
Czechia	2 677	3 178	1 023	167	842	IE, NA, NO	7 887	7 887	0.00	2 675	-0.08
Denmark (KP)	641	2 802	169	128	539	26	4 306		–		–
Denmark (Convention)	642	2 802	509	131	548	216 423	221 054	4 292	-98.06	628	-2.19
Estonia	2 444	986	275	35	360	42	4 141	4 534	9.49	2 438	-0.21
European Union (KP)	167 078	124 198	95 482	25 587	30 958	15 583	458 886		–		–
European Union (Convention)	166 920	124 043	88 320	24 688	30 894	12 464	447 329	449 791	0.55	162 232	-2.81
Finland	21 849	2 502	243	6 434	1 506	1 310	33 843	33 846	0.01	22 409	2.56
France (KP)	23 728	18 206	13 914	1 162	5 858	990	63 858		–		–
France (Convention)	24 710	18 266	14 917	1 183	5 910	1 561	66 547	54 909	-17.49	17 170	-30.52
Germany	11 018	12 594	6 771	742	4 629	36	35 790	35 758	-0.09	11 419	3.64
Greece	3 481	3 025	5 508	301	610	273	13 198	13 196	-0.02	3 902	12.10
Hungary	2 057	5 193	1 198	264	586	5.7	9 303	9 303	0.00	2 054	-0.12
Iceland	144	145	5 893	897	41	3 119	10 239	10 300	0.60	51	-64.77
Ireland	779	743	4 214	1 225	126	26	7 112	7 028	-1.18	778	-0.12
Italy	9 578	9 044	7 953	586	2 317	655	30 134	30 207	0.24	9 512	-0.69
Japan	24 985	4 059	945	1 348	3 889	2 591	37 817	37 797	-0.05	24 935	-0.20
Kazakhstan	19 087	35 943	183 425	8 791	2 307	22 938	272 490	272 490		3 425	-82.05
Latvia	3 242	1 465	1 035	400	313	5.4	6 459	6 459	0.01	3 407	5.10
Liechtenstein	6.3	1.6	4.9	0.37	1.9	1.0	16	16	-0.34	6.7	6.70
Lithuania	2 222	2 011	1 542	361	384	8.0	6 529	6 529	0.01	2 200	-1.00
Luxembourg	93	59	75	1.3	30	0.024	259	259	0.15	89	-4.74
Malta	0.14	12	10	0.013	8.9	0.45	32	32	1.47	0.46	218.58
Monaco	NO	NO	NO	NO	0.21	NO	0.21	7.5	–		–
Netherlands	364	837	1 459	823	633	39	4 154	4 154	0.00	369	1.31
New Zealand	9 972	476	14 584	759	238	897	26 925	26 771	-0.57	9 866	-1.06
Norway	12 124	939	11 425	3 755	709	3 431	32 383	62 522	93.07	12 172	0.40
Poland	9 443	13 850	4 187	1 376	2 336	79	31 271	31 269	-0.01	9 471	0.30
Portugal	4 371	2 393	633	199	519	1 124	9 239	9 223	-0.18	3 312	-24.22
Romania	6 989	7 958	5 849	1 025	1 547	472	23 839	23 840	0.00	6 929	-0.86
Russian Federation	897 017	88 291	203 054	179 219	14 256	361 461	1 743 297	1 709 825	-1.92	815 312	-9.11
Slovakia	2 028	1 525	850	94	239	167	4 904	4 903	-0.01	1 926	-5.03
Slovenia	1 208	240	415	14	117	32	2 027	2 048	1.05	1 240	2.64
Spain	15 696	19 992	11 871	421	1 516	1 156	50 651	50 595	-0.11	18 568	18.30
Sweden	28 172	2 809	514	7 422	1 918	4 302	45 136	52 886	17.17	27 980	-0.68
Switzerland	1 266	381	1 386	188	337	572	4 129	4 129	0.00	1 266	0.00
Türkiye	22 984	27 170	24 131	1 974	946	1 761	78 966	78 535	-0.55	22 064	-4.00
Ukraine	10 689	34 987	7 506	3 398	2 882	892	60 355	60 355	0.00	9 684	-9.41
United Kingdom of Great Britain and Northern Ireland (KP)	3 622	4 802	14 111	986	1 815	421	25 758		–		–
United Kingdom of Great Britain and Northern Ireland (Convention)	3 623	4 803	14 111	986	1 819	421	25 763	24 361	-5.44	3 182	-12.17
United States of America	282 062	161 900	286 444	2 987	6 468	NE	739 860	983 151	32.88	309 795	9.83

[a] Source of international statistics: FAOSTAT data, downloaded on 14 June 2022. At the time of the download data for 2020 was not available, therefore, data for 2019 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 (2020)

	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	1.61	331	0.019	NO	NO	T1	CS	0.02	4.4	0.75	NE, NO	T1	CS	0.03	6.8	0.10	NE, NO
Austria	T2	CS, D	1.13	93	0.20	NO	NO	T1, T2	CS, D	0.11	9.3	1.8	107	T2	CS	0.14	11	0.25	NA, NO
Belarus	NA	NA	3.13	297	IE, NE, NO	IE, NE	0.034	NA	NA		–	NO	NO	NA	NA		–	NO	NO
Belgium	T2	D	0.54	50	0.026	NO	NO	T1	CS	0.02	2.0	0.75	IE, NO	T1	CS	0.03	3.1	0.10	IE, NO
Bulgaria	T2	CS, D	4.18	298	0.032	0.36	NO	T1	D	0.04	2.5	10	NE	T1	D	0.03	1.8	0.60	NE
Canada	CS	CS	3.61	640	0.048	1.1	NO	T3	PS	0.03	4.7	1.5	IE, NA	T3	PS	0.03	4.7	0.13	NA
Croatia	T2	CS	5.14	301	0.035	0.027	NO	T1	D	0.06	3.7	10	2.0	T1	D	0.03	1.7	0.60	NA, NE
Cyprus	T2	D	6.10	604	0.012	NO	NO	T1	D	0.07	6.6	4.5	2.0	T1	D	0.05	4.7	0.27	NE, NO
Czechia	T1	D	2.91	308	0.044	NO	NO	CS, D, T1	CS, D	0.58	62	4.0	IE, NE	T1	D	0.07	7.0	0.24	IE, NO
Denmark (KP)	CS, T2	CS, D	1.29	92	0.008	NO	NO	T1, T2	CS, D	0.90	64	NE, NO	NE, NO	T1, T2	CS, D	0.17	13	NE, NO	NA, NO
Denmark (Convention)	CS, T2	CS, D	1.25	92	0.008	0.027	NO	T1, T2	CS, D	0.86	63	NE, NO	NE, NO	T1, T2	CS, D	0.17	12	NE, NO	NA, NO
Estonia	T2	D	1.50	0.13	0.11	NO	NO	T1	D	0.16	0.014	10	NE, NO	T1	D	0.11	0.010	0.60	NE, NO
European Union (KP)			2.51	1.4	0.029	1.1	NA, NO			0.15	0.082	4.8	75			0.08	0.041	0.28	0.021
European Union (Convention)			2.51	1.3	0.029	1.3	NA, NO			0.15	0.082	4.8	75			0.08	0.041	0.28	0.021
Finland	T2	CS, D	2.90	250	0.027	NO	NO	T1	D	0.15	13	5.6	1.0	T1	D	0.09	7.8	0.34	NA
France (KP)	T2	CS, D	3.04	0.18	0.037	NO	NO	T2	CS	0.29	0.017	8.4	2.0	T2	CS	0.05	0.003	0.14	NA
France (Convention)	T2	CS, D	3.06	0.18	0.037	0.017	NO	T2	CS	0.28	0.017	8.4	2.0	T2	CS	0.05	0.003	0.14	NA
Germany	T2	CS	0.93	81	0.47	NO	NO	T2	CS	0.10	8.6	1.4	37	T2	CS	0.04	3.7	0.074	0.060
Greece	T2	CS, D	4.58	318	0.021	0.35	NO	D	D	0.11	7.4	10	NE	D	D	0.02	1.7	0.60	NO
Hungary	T2	D	4.63	298	0.017	NO	NO	D, T1	D	0.16	11	10	NE, NO	T1	D	0.07	4.5	0.60	NA, NO
Iceland	T2	CS, D	4.15	514	0.047	0.020	NO	T1	CS, D	0.07	8.6	10	8.1	T1	D	0.05	6.1	0.60	NE, NO
Ireland	T2	CS, D	1.16	134	0.11	IE	NO	T1	D	0.05	5.9	10	2.0	T1	D	0.03	3.7	0.60	NO
Italy	T2	CS	3.74	241	0.066	NO	NO	D	CS, D	0.03	1.9	1.6	2.0	D	D	0.13	8.2	0.60	NA, NO
Japan	T3	CS	0.23	21	0.28	NO	0.48	T2	CS	0.01	0.65	2.8	NE	T2	CS	0.02	2.1	0.78	NO
Kazakhstan	M	CS, M	1.12	203	0.034	0.034	NO	NA	NA		–	NO	NO	NA	NA		–	NO	NO
Latvia	T2	CS, D	3.62	199	0.021	NO	NO	D	D	0.42	23	10	11	D	D	0.18	10	0.60	NO
Liechtenstein	T2	CS	0.05	2.3	NO	NO	NO	CS	CS	0.03	1.3	1.0	NO	CS	CS	0.02	0.80	0.050	NO
Lithuania	T2	D	2.79	201	0.080	NO	NO	T1	D	0.32	23	10	374	T1	D	0.13	9.4	0.60	NO
Luxembourg	T1	D	0.50	62	0.20	IE	NO	T1	D	0.20	25	10	IE, NE	T1	D	0.06	6.9	0.60	NE
Malta	M, T2	M	6.86	282	0.022	NA	NO	NA	NA	0.04	1.6	NO	0.8	NA	NA		–	NO	NA
Monaco	NA	NA		–	NO	NO	NO	NA	NA		–	NO	NO	NA	NA		–	NO	NO
Netherlands	T2	CS	1.35	–	0.040	NA, NO	NO	T1	CS	0.07	–	0.81	26	T1	CS	0.05	–	0.081	0.046
New Zealand	T2	CS, D	3.35	517	0.016	0.011	NO	T1	D	0.05	7.8	4.0	NO	T1	D	0.04	5.6	0.24	NO
Norway	T2	D	1.71	157	2.3	NO	NO	T1	D	0.10	9.1	4.0	0.58	T1	D	0.03	3.0	0.24	NO
Poland	T2	CS, D	2.01	197	0.035	NO	NO	T1	D	0.04	4.3	6.7	IE, NA	T1	D	0.03	3.1	0.40	NA, NO
Portugal	T2	CS, D	5.88	329	0.035	NO	NA, NO	T1	D	0.05	2.5	10	2.0	T1	D	0.03	1.5	0.60	NO
Romania	T2	CS, D	3.52	201	0.017	NO	NA	T1	D	0.05	2.9	10	NE, NO	T1	D	0.02	1.4	0.60	NA, NO
Russian Federation	T2	CS, D	3.30	461	0.037	NO	NO	T1	D	0.00	0.096	10	NO	T1	D	0.00	0.069	0.60	NO
Slovakia	T2	CS	3.03	205	0.034	NO	NO	T1	D	0.37	25	10	IE	T1	D	0.26	18	0.60	IE
Slovenia	T2	CS, D	1.30	98	0.061	NO	NO	T1	D	0.07	5.4	10	NE	T1	D	0.05	3.8	0.60	NE
Spain	T2	CS, D, OTH	3.45	200	0.030	NO	NO	T1	D	0.12	6.8	10	94	T1	D	0.08	4.5	0.60	NE, NO
Sweden	T2	CS, D	1.25	56	0.039	NO	NO	T1, T2	CS, D	0.15	6.8	11	131	T1	D	0.05	2.4	0.69	NA, NO
Switzerland	T2	CS, D	0.63	31	NO	NO	NO	T2	CS	0.06	3.2	1.8	0.17	T2	CS	0.02	1.1	0.092	NO
Türkiye	T2	CS, D	2.14	135	0.006	0.054	NO	T1	D	0.00	0.14	4.0	NO	T1	D	0.00	0.10	0.24	NO
Ukraine	T3	CS, D	2.43	175	0.017	0.024	NO	T1	D	0.00	0.090	4.0	NA	T1	D	0.00	0.080	0.30	NA
United Kingdom of Great Britain and Northern Ireland (KP)	T2	CS	3.19	192	0.013	NO	NO	T1	D	0.30	18	10	1.1	T1	D	0.18	11	0.60	NO
United Kingdom of Great Britain and Northern Ireland (Convention)	T2	CS	3.18	192	0.013	NO	NO	T1	D	0.30	18	10	1.1	T1	D	0.18	11	0.60	NO
United States of America	CS	CS	1.83	325	0.020	NO	NO	D	D	0.04	7.2	4.0	0.80	D	D	0.03	6.1	0.30	IE, NO

[a] The national total includes indirect CO_2 emissions from the atmospheric oxidation of CH_4, CO and NMVOCs for the following Parties: Canada, Cyprus, Czechia, Denmark (Convention), Denmark (KP), European Union (Convention), European Union (KP), Finland, Japan, Latvia, Netherlands, Portugal, Slovakia 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 (2020)

	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			Waste incineration	Open burning of waste	Methods	EF			Domestic	Industrial	Methods	EF			Domestic	Industrial
					(%)	(kg CO_2 eq.)	kg/t	kg/t			(%)	(kg CO_2 eq.)	kg/kg	kg/kg			(%)	(kg CO_2 eq.)	kg N_2O-N/kg N	kg N_2O-N/kg N
IPCC default EF[d]																			0.005	
Australia	26	26	T2	CS	0.01	1.2	1 443	NO	T2, T3	CS, D	0.46	95	0.076	0.081	CS	D	0.08	17	0.007	IE
Austria	8.9	8.9	T2	CS	0.00	0.23	2 052	NO	T2	CS, D	0.03	2.5	0.16	NA	CS	CS, D	0.23	19	0.032	0.005
Belarus	9.4	9.4	NA	NA	0.03	2.9	1 132	NO	T1	D	3.23	306	0.19	0.079	T1	D	0.17	16	0.005	NE
Belgium	11	12	T1, T3	PS	0.24	22	6 145	NO	CR, T1	CR, D	0.21	20	NE	IE, NA, NE	D	D	0.10	8.9	0.005	NA
Bulgaria	6.9	6.9	T1	D	0.02	1.6	1 580	NO	T2	D	0.81	57	0.071	0.042	T1	D	0.28	20	0.005	NA
Canada	38	38	T2, T3	D, OTH	0.01	2.2	232	NE, NO	CS, T3	CS, D, PS	0.16	28	0.12	NE	CS, D, T3	D, PS	0.21	37	0.024	NE
Croatia	4.0	4.0	NA	NA		–	NO	NO	T1	D	1.88	110	0.25	0.002	T1	D	0.38	22	0.005	NA
Cyprus	0.90	1.2	NA	NA		–	NO	NO	T1	D	0.52	52	0.025	0.079	OTH, T1	D, OTH	0.19	18	0.005	NE
Czechia	11	11	T1	CS, D	0.09	9.8	1 117	176	CS, T1	CS, D	0.70	74	0.15	0.016	T1	CS, D	0.17	19	0.005	NE
Denmark (KP)	5.8		NA	NA		–	NO	NO	CS	CS	0.13	9.1	0.094	IE, NO	CS	CS	0.35	25	0.087	0.10
Denmark (Convention)	5.9	5.8	T1	CS	0.01	0.58	351	154	CS, NA, T1	CS, D, NA	0.13	9.7	0.094	IE, NA, NO	CS, T1	CS, D	0.35	26	0.063	0.13
Estonia	1 329	1.3	T1, T2	D	0.00	0.000	114	335	T1	D	0.46	0.040	0.067	0.20	T1	D	0.27	0.024	0.005	NO
European Union (KP)	69 050				0.09	0.046	775	4.4			0.47	0.25	0.14	0.026			0.20	0.10	0.005	0.064
European Union (Convention)	69 050	515			0.09	0.046	776	4.4			0.47	0.25	0.14	0.026			0.19	0.10	0.005	0.064
Finland	5.5	5.5	NA	NA		–	IE, NO	NE, NO	CS, T2	CS, D	0.34	29	0.042	0.001	CS, T1	D	0.16	14	0.005	0.005
France (KP)	67 293		T1, T2	CS, D	0.41	0.024	4 523	48	T1	D	0.59	0.035	0.10	3.2	T1	D	0.08	0.005	0.002	NA
France (Convention)	67 871	67	T1, T2	CS, D	0.40	0.024	4 522	48	T1	D	0.60	0.035	0.10	3.2	T1	D	0.08	0.005	0.002	NA
Germany	83	83	T1	CS		–	NO	NO	CS, D, T2	CS, D	0.07	5.8	0.18	0.001	CS, D, T2	CS, D	0.06	5.5	0.006	IE
Greece	11	11	D	CS, D	0.00	0.28	508	NO	CS, D	CS, D	1.42	98	0.023	0.20	D	CS	0.38	27	0.005	NE
Hungary	9.8	9.8	T2, T3	CS, D	0.04	2.6	1 532	NO	T1	D	0.37	24	0.12	0.013	CS	D	0.14	8.9	0.006	NE
Iceland	0.36	0.37	T1, T2, T3	D	0.13	16	498	NO	T1	CS, D	0.93	115	0.12	0.025	T1	D	0.13	17	0.005	IE
Ireland	5.0	5.0	T1	D	0.05	5.9	2 933	1 346	T1, T2	CS, D	0.09	11	0.050	IE, NO	T1	D	0.19	22	0.005	IE
Italy	59	59	D, T1	CS, D	0.02	1.6	767	5.5	T1	D	0.62	40	0.16	0.25	T1	CR, D	0.32	21	0.005	0.25
Japan	127	126	CS	CS	1.00	91	588	195	CS, D	CS, D	0.14	12	NA	NA	CS, D	CS, D	0.18	16	NA	0.005
Kazakhstan	19	19	T1	D	0.01	1.3	NO	NO	T1	D	0.90	164	0.17	0.075	T1	D	0.11	21	0.005	NE
Latvia	1.9	1.9	D	D	0.00	0.020	1 422	NE	T1, T2	CS, PS	0.69	38	0.066	0.010	D	D	0.31	17	0.005	0.005
Liechtenstein	0.039	0.038	CS	CS	0.01	0.26	NO	250	CS	CS	0.44	20	NA	IE, NO	D	D	0.35	16	NA	IE, NO
Lithuania	2.8	2.8	T1	D	0.01	0.75	963	NO	T1	D	0.58	42	0.053	IE, NA	T1	D	0.23	17	0.005	NA
Luxembourg	0.73	0.63	NA	NA		–	IE, NO	NO	T1	CS	0.02	2.8	0.16	NO	T1	D, PS	0.05	6.1	0.006	0.010
Malta	0.52	0.52	T1	D	0.03	1.3	106	NE	D	CS	0.27	11	0.013	IE, NO	D	D	0.31	13	0.002	IE
Monaco	0.038	0.039	T1	D		–	IE, NO	NO	T3	D	0.11	2.0	0.003	IE	T1	D	0.69	13	0.005	IE
Netherlands	–	17	CS	CS		–	IE, NA	NO	T2	CS, D	0.14	–	0.053	0.17	T1, T2	D	0.05	–	IE	NE
New Zealand	5.1	5.1	T1	D	0.11	18	226	186	T1, T2	CS	0.33	50	0.032	0.023	T1, T2	CS, D	0.15	24	0.005	0.009
Norway	5.4	5.4	D	OTH	0.33	30	511	NE, NO	T1	CS, D	0.41	38	0.088	0.027	CS, T1	CS, D	0.14	13	0.007	IE
Poland	38	38	T1, T2	CS, D	0.16	16	747	NA	T1, T2	CS, D	0.54	53	0.16	0.033	T1	D	0.21	21	0.005	NA
Portugal	10	10	T1, T2	CS, D	0.06	3.1	953	NO	T2	CS, D	1.21	68	0.11	0.018	D	CS, D	0.33	19	0.004	IE
Romania	19	19	D	D	0.01	0.53	276	NO	D	D	1.39	79	0.14	0.017	D	D	0.39	22	0.005	NE
Russian Federation	147	144	NA	NA		–	IE, NO	NE, NO	T1, T2	CS, D	1.21	169	0.21	0.077	T1	CS, D	0.14	20	0.005	NO
Slovakia	5.5	5.5	T2	CS, D	0.00	0.13	117	NO	T1, T2	D	0.75	51	0.30	0.025	T1, T2	D	0.14	9.2	0.005	0.005
Slovenia	2.1	2.1	T1	D	0.12	9.3	2 371	NO	T1	CS, D	0.83	62	0.092	0.002	T1	D	0.24	18	0.005	NA
Spain	47	47	NA	NA		–	IE, NO	NO	T1, T2	CS, D	0.63	36	0.066	0.010	D	D	0.33	19	0.005	IE
Sweden	10	10	T3	PS	0.24	11	749	NE	T2	CS	0.06	2.8	0.21	NE	T1	CS, D	0.43	19	0.021	0.005
Switzerland	8.6	8.6	T1, T2	CS	0.02	1.0	78	NO	T2	CS, D	0.44	22	0.26	IE	D	D	0.24	12	0.005	IE
Türkiye	83	84	T2	CS, D	0.00	0.043	IE, NO	190	T2	CS	0.55	34	0.075	0.013	T1	D	0.43	27	0.005	IE
Ukraine	44	44	T1, T2	D	0.00	0.088	31	NE	T2	CS, D	1.01	72	0.11	0.033	CS, T1	CS, D	0.32	23	0.009	0.004
United Kingdom of Great Britain and Northern Ireland (KP)	67		T1, T2	CS, D	0.06	3.7	784	NE, NO	CS, T1	CS, D	0.42	25	0.26	0.038	CS, T1	CS, D	0.25	15	0.005	NE
United Kingdom of Great Britain and Northern Ireland (Convention)	67	67	T1, T2	CS, D	0.06	3.7	784	NE, NO	CS, T1	CS, D	0.42	26	0.26	0.038	CS, T1	CS, D	0.25	15	0.005	NE
United States of America	336	332	NA	NA		–	IE	NA	CS, D, T2	CS, D	0.31	54	0.13	0.048	CS, D, T2	CS, D	0.39	70	0.057	0.032

[a] Source of population data: World Bank https://data.worldbank.org/indicator/SP.POP.TOTL, downloaded on 14 June 2022.

[b] The national total includes indirect CO_2 emissions from the atmospheric oxidation of CH_4, CO and NMVOCs for the following Parties: Canada, Cyprus, Czechia, Denmark (Convention), Denmark (KP), European Union (Convention), European Union (KP), Finland, Japan, Latvia, Netherlands, Portugal, Slovakia 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 CO_2 eq./yr)
Australia	20	2	0.2	X	X	X		X	Annually/CP	117.21	4.700
Austria	30	2	0.05					X	CP	22.08	–6.516
Belgium	20	5	0.5					X	CP	41.39	–2.499
Bulgaria	10	5	0.1					X	CP	31.95	–8.168
Croatia	10	2	0.1					X	CP	8.74	–6.289
Cyprus	10	5	0.3					X	CP	1.58	-0.157
Czechia	30	2	0.05					X	CP	55.53	-4.686
Denmark (KP)	10	5	0.5	X	X			X	Annually	19.87	0.409
Estonia	30	2	0.5					X	CP	11.20	–1.742
European Union (KP)	10-30	2-5	0.05-1	X	X	X	X	X	Annually/CP	1643.64	–306.706
Finland	10	5	0.5					X	CP	19.98	–20.466
France (KP)	10	5	0.5					X	CP	153.46	–67.410
Germany	10	5	0.1	X	X			X	CP	351.01	–22.418
Greece	25	2	0.3					X	CP	30.12	-1.830
Hungary	30	5	0.5					X	Annually	30.68	–1.000
Iceland	10	2	0.5			X		X	CP	1.02	0.154
Ireland	20	5	0.1	X	X			X	CP	15.80	–0.142
Italy	10	5	0.5	X	X			X	CP	146.14	–21.182
Japan	30	5	0.3	X	X	X		X			
Kazakhstan	10	2	0.05					X	CP		
Latvia	20	5	0.1					X	CP	7.39	–16.302
Liechtenstein	20	3	0.06					X	CP	0.06	0.000
Lithuania	30	5	0.1					X	CP	13.50	–4.552
Luxembourg	10	5	0.5					X	CP	3.60	-0.418
Malta	30	5	1					X	CP	0.55	–0.049
Monaco	10	5	0.5					X	CP	0.03	
Netherlands	20	5	0.5					X	CP	62.50	−1.464
New Zealand	30	5	1					X	CP	18.43	11.150
Norway	10	5	0.5	X	X			X	CP	14.54	–11.400
Poland	10	2	0.1					X	CP	162.41	–27.133
Portugal	10	5	1	X	X			X	CP	17.01	–6.830
Romania	10	5	0.25			X		X	CP	85.38	–15.444
Russian Federation	18	5	1					X			-
Slovakia	20	5	0.3					X	CP	20.80	0.358
Slovenia	30	2	0.25					X	CP	5.69	–3.171
Spain	20	3	1	X				X	CP	79.34	−23.100
Sweden	10	5	0.5					X	CP	20.18	–41.336
Switzerland	20	3	0.06					X	CP	15.04	0.220
Ukraine	30	5	0.1					X	CP	262.63	–48.700
United Kingdom of Great Britain and Northern Ireland (KP)	20	2	0.1	X	X		X	X	CP	224.82	–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, or reported by Party in the latest greenhouse gas inventory submission.

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]		N_2O	CH_4[h]	N_2O	N_2O	N_2O	CO_2[k]	CH_4	N_2O					Mineral	Organic[d]		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	R	R	R
Austria	R	R	R	R	R	NO	R	NO	NO	NO	R	IE	NO	NO	NO	R	R	R	R	R	NO	IO	NO	NO	NO	R	IE	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	R	R	NO	NO	IE	R	R	R	R	R	R	R	R	R	NO	NE	NE	R	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	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	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
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)	R	R	R	R	R	NO	NO	NO	NO	NO	R	NE	R	R	R	R	R	R	R	R	NO	IO	NO	NO	NO	R	NE	R	R	R
Germany	R	R	R	R	R	R	IE	NO	R	R	R	R	IE, NO	IE, NO	IE, NO	R	R	R	R	R	R	NO	NO	R	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	R	R	R	R	NO	NO	NO	R	R	NO	NO	R	R	R	NO	R	R	R
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	NO	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	R	R	R	NO	NO	NO
Kazakhstan																														
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	R	R	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	R	R	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
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	R	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	NR	NR	R	R	NO	NO	NO	NO	NO	NO	R	R	R	R	R	R	R	R	R	NO	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	IE	R	IE	R	NO	IE	IE	NO	NO	NO	NO	IE	IE	IE	R	IE	R	IE	R	NO	IO	IE	NO	NO	R	R	NO	NO	NO
Russian Federation	IE	IE	IE	IE	IE	NO	IE	NO	NO	NO	NO	NO	IE	IE	IE	IE	IE	IE	IE	IE	IE	IE	NO	IE	IE	IE	IE	NO	NO	NO
Slovakia	R	R	R	R	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, R	NR, R	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	R	R	R	NE	R	R	R	R	IE	R	R	R	R	IO	NO	NO	NO	NO	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 CO_2 emissions/removals from organic soils, including CO_2 emissions from dissolved organic carbon associated with drainage and rewetting. On-site CO_2 emissions/removals from drainage and rewetting from organic soils and off-site CO_2 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] N_2O 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] CH_4 and N_2O 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] CH_4 emissions from drained soils and drainage ditches should be reported here, as appropriate.

[i] 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 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 CO_2 emissions from biomass burning are not already included under changes in carbon stocks, they should be reported under biomass burning. Parties that include CO_2 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	
Belgium	R	R	NO	NO	NO	NO	R	NO	NO	NO	R	NO	NO	NO	NO		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Bulgaria	R	IE	NA	R	NA	NO	R	NO	NO	NO	NO	NO	IE	R	R		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Croatia	R	R	NA	NA	NA	NO	R	NO	NO	NO	NO	NO	R	R	R		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	
Czechia	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	
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	
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	
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	
France (KP)	R	R	R	R	R	NO	R	NO	NO	NO	R	NE	R	R	R		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Germany	R	R	R	R	R	R	R	NO	R	R	R	R	IE, NO	R	R		R	R	IE	IE	R	R	R	R	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	
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	
Iceland	R	R	R	R	R	R	R	NO	R	R	NO	NO	NO	NO	NO		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	
Italy	R	R	R	R	NR	NR	R	NO	NO	NO	NO	NO	R	R	R		R	R	NO	NO	R	R	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	
Kazakhstan																												
Latvia	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	
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	
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	
Luxembourg	R	R	R	R	R	NO	IO	NO	NO	NO	NO	NO	NE	NE	NE		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Malta	R	R	NR	NR	NR	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO		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	
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	
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	
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	
Poland	R	R	NR	R	R	R	R	NO	NO	NO	NO	NO	R	R	R		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	
Romania	R	IE	NR	NR	NR	R	R	IE	NO	NO	NO	NO	R	R	R		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Russian Federation	IE	IE	IE	IE	IE	IE	IE	NO	IE	IE	NO	NO	IE	IE	IE		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Slovakia	R	R	R	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	
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	
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	
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	
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	
United Kingdom of Great Britain and Northern Ireland (KP)	R	IE	R	R	R	R	R	NO	R	R	R	NO	R	R	R		R	IE	NR	NR	R	R	R	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 CO_2 emissions/removals from organic soils, including CO_2 emissions from dissolved organic carbon associated with drainage and rewetting. On-site CO_2 emissions/removals from drainage and rewetting from organic soils and off-site CO_2 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] N_2O 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] CH_4 and N_2O 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] CH_4 emissions from drained soils and drainage ditches should be reported here, as appropriate.

[i] 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 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 CO_2 emissions from biomass burning are not already included under changes in carbon stocks, they should be reported under biomass burning. Parties that include CO_2 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	R	IE	R	R	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	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)	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
Germany	R	R	IE, NA	NO	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	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	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
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																									
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	IE	R	IE	R	NO	IE	NO	NO	NO	NO	NO	NO	NO
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	NR	NR	NR	R	R	R	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 CO_2 emissions/removals from organic soils, including CO_2 emissions from dissolved organic carbon associated with drainage and rewetting. On-site CO_2 emissions/removals from drainage and rewetting from organic soils and off-site CO_2 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] CH_4 and N_2O 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] CH_4 emissions from drained soils and drainage ditches should be reported here, as appropriate.

[g] 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 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 CO_2 emissions from biomass burning are not already included under changes in carbon stocks, they should be reported under biomass burning. Parties that include CO_2 emissions from biomass burning in their carbon stock change estimates should report IE (included elsewhere).

[j] N_2O 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)	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
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	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
Kazakhstan													
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		R	NE	R	R	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 CO_2 emissions/removals from organic soils, including CO_2 emissions from dissolved organic carbon associated with drainage and rewetting. On-site CO_2 emissions/removals from drainage and rewetting from organic soils and off-site CO_2 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] N_2O 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] CH_4 and N_2O 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] CH_4 emissions from drained soils and drainage ditches should be reported here, as appropriate.

[h] 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 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 CO_2 emissions from biomass burning are not already included under changes in carbon stocks, they should be reported under biomass burning. Parties that include CO_2 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 2020[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	8 997	8 941	56	0.33	IE, NA	0.33	0.17	IE, NA	0.17	0.020	0.099	–0.058	-0.032	NA	NA	NA
Austria	254	254	NA, NO	1.4	-0.47	0.98	0.37	-0.10	0.27	0.72	0.016	0.42	NA, NO	NA	NA	NA
Belgium	35	35	NA, NO	1.3	0.000	1.3	0.26	–0.000	0.26	NA, NO	NA, NO	0.77	NA, NO	NA	NA	NA
Bulgaria	119	119	NO	3.4	-0.14	3.2	IE, NO	IE, NO	IE, NO	0.32	NA, NO	–0.45	NO	NO	NO	NO
Croatia	66	66	NA, NO	0.85	-0.011	0.84	0.37	–0.012	0.36	0.22	0.016	–0.24	NA, NO	NA	NA	NA
Cyprus	0.42	0.42	NO	1.0	-0.029	0.97	0.28	–0.008	0.27	3.4	NO	0.20	NO			
Czechia	69	69	NO	1.9	NO	1.9	0.47	NO	0.47	0.14	0.037	0.20	NO	NO	NO	NO
Denmark (KP)	112	101	11	0.69	-0.16	0.53	0.10	IE	0.10	0.009	0.023	0.18	-1.3			
Estonia	57	45	12	0.40	IE, NO	0.40	0.16	IE, NO	0.16	0.30	0.003	0.17	-0.34	NO	NO	NO
European Union (KP)	10 376	9 905	472	1.6	-0.60	1.0	0.40	-0.16	0.24	0.12	0.037	0.063	-1.3	NA, NO	NA, NO	NA, NO
Finland	212	120	92	1.6	-0.60	0.95	0.46	-0.24	0.23	IE, NA	IE, NA	0.083	-1.0	NA	NA	NA
France (KP)	2 396	2 396	IE, NO	1.4	-0.39	0.97	0.46	IE, NO	0.46	0.15	0.022	0.039	IE, NO	NO	NO	NO
Germany	326	301	25	0.86	-0.57	0.30	0.18	-0.36	–0.19	0.47	0.003	0.29	-2.7	NA	NA	NA
Greece	35	35	NA, NO	1.9	-1.4	0.54	0.36	-0.26	0.10	NA, NE	NA, NE	NA, NE	NA	NA	NA	NA
Hungary	178	178	NA, NO	1.4	-0.063	1.4	0.36	–0.002	0.36	NA, NE	0.073	NA, NE	NA, NO	NA	NA	NA
Iceland	50	46	3.5	1.1	IE, NA, NO	1.1	0.28	IE, NA, NO	0.28	0.14	NA, NO	0.41	-0.37	NO	NO	NO
Ireland	333	149	184	5.3	-3.1	2.1	1.8	-1.4	0.44	0.37	0.36	0.087	-1.6	NA	NA	NA
Italy	2 137	2 137	NO	2.1	-1.2	0.87	0.43	-0.26	0.17	0.012	0.007	0.11	NA, NO	NO	NO	NO
Japan	100	100	NA, NO	2.1	0.000	2.1	0.55	–0.001	0.55	0.14	0.47	0.087	NA, NO	NA	NA	NA
Kazakhstan																
Latvia	121	118	2.8	0.50	-0.072	0.43	0.12	–0.018	0.10	0.081	0.085	NA, NO	-0.52	NA	NA	NA
Liechtenstein	0.036	0.036	NO	1.8	-0.038	1.8	0.59	–0.012	0.58	NO	NO	0.31	NO	NO	NO	NO
Lithuania	57	50	7.8	1.7	-0.049	1.6	0.24	-0.16	0.082	0.10	NA, NO	0.44	-0.93	NA	NA	NA
Luxembourg	1.4	1.4	NO	3.7	-0.014	3.7	0.73	IE, NO	0.73	0.45	0.16	0.47	NO	NO	NO	NO
Malta	0.055	0.055	NO	0.18	NO	0.18	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	43	5.5	3.3	-0.13	3.1	0.69	-0.10	0.58	0.99	0.14	0.023	-0.94	NO	NO	NO
New Zealand	775	773	2.0	5.9	-3.5	2.5	1.3	-0.85	0.44	-0.014	1.2	–0.23	-0.68	NA	NA	NA
Norway	106	96	11	0.78	-0.33	0.45	0.23	–0.054	0.18	1.4	0.922	0.047	-1.1	NA	NA	NA
Poland	797	747	50	0.78	-0.027	0.76	0.22	IE, NO	0.22	NA, NO	NA, NO	–0.11	-0.68	NO	NO	NO
Portugal	642	642	NO	2.1	-1.0	1.1	0.40	-0.30	0.094	0.035	IE, NO	0.15	NO	NO	NO	NO
Romania	46	46	NO	3.1	IE, NO	3.1	IE, NO	IE, NO	IE, NO	0.057	IE, NO	1.64	NO	NO	NO	NO
Russian Federation	IE, NO	IE, NO	NO	IE, NO	IE, NO	IE, NO	IE, NO	IE, NO	IE, NO	IE, NO	IE, NO	IE, NO	NO	NO	NO	NO
Slovakia	51	51	NA, NO	1.2	NA, NO	1.2	0.28	NA, NO	0.28	0.42	0.080	1.19	NA, NO	NA	NA	NA
Slovenia	NO	NO	NO	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NO	NO	NO
Spain	1 277	1 277	NA, NO	0.81	IE, NA	0.81	IE, NA	IE, NA	IE, NA	0.048	0.019	0.17	NA, NO	NA	NA	NA
Sweden	334	318	16	0.62	IE, NO	0.62	0.21	IE, NO	0.21	0.22	0.047	-0.060	-2.2	NO	NO	NO
Switzerland	2.6	2.6	0.011	2.2	-1.4	0.78	0.76	-0.38	0.38	-0.056	0.005	0.57	-0.078			
Ukraine	315	315	NA, NO	0.52	-0.004	0.51	0.11	IE, NA	0.11	0.84	NA	0.74	NA, NO	NA	NA	NA
United Kingdom of Great Britain and Northern Ireland (KP)	621	558	63	2.1	-0.65	1.5	0.90	-0.40	0.50	0.081	0.18	-0.56	-1.3	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 CO_2 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 CO_2 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 2020

	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	11 278	11 190	87	IE, NO	-0.11	-0.11	IE, NO	-0.047	-0.047	–0.054	-0.11	-0.28	0.67	NO	NO	NO
Austria	82	82	NA, NO	0.21	-0.81	-0.60	0.053	-0.20	-0.15	-0.47	0.001	-0.35	NA, NO	NA	NA	NA
Belgium	34	34	NA, NO	0.029	-3.7	-3.7	0.006	-0.76	-0.75	-0.13	-0.20	-1.1	NA, NO	NA	NA	NA
Bulgaria	6.5	6.5	NO	0.023	-2.3	-2.3	IE, NO	IE, NO	IE, NO	-0.36	-0.16	-2.1	NO	NO	NO	NO
Croatia	4.8	4.8	NA, NO	0.72	-0.20	0.52	NA, NO	-0.046	-0.046	-0.020	–0.019	-1.5	NA, NO	NA	NA	NA
Cyprus	0.014	0	NO	0.28	-4.7	-4.4	0.079	-1.3	-1.2	-0.19	NO	0.98	NO			
Czechia	20	20	NO	NA, NO	-2.9	-2.9	NA, NO	-0.64	-0.64	0.084	0.13	-0.13	NA, NO	NO	NO	NO
Denmark (KP)	16	15	0.76	0.48	-1.9	-1.5	0.160	-0.39	-0.23	-1.18	-0.11	-0.40	-8.4	NO	NO	NO
Estonia	34	29	4.8	IE, NA	-1.6	-1.6	IE, NA	-0.38	-0.38	-0.58	–0.077	-1.0	-1.5	NA	NA	NA
European Union (KP)	3 395	3 187	208	0.079	-1.1	-1.1	0.026	-0.26	-0.24	-0.23	–0.042	-0.74	-3.8	NA, NO	NA, NO	NA, NO
Finland	473	360	113	0.024	-0.45	-0.42	0.009	-0.13	-0.12	IE, NA	–0.007	-0.26	-4.8	NA	NA	NA
France (KP)	1 153	1 153	IE, NO	NO	-1.4	-1.4	NO	-0.40	-0.40	-0.20	–0.028	-0.71	IE, NO	NO	NO	NO
Germany	136	123	12	0.78	-1.7	-0.91	0.24	-0.24	-0.004	-0.79	–0.084	-0.15	-5.2	NA	NA	NA
Greece	5.9	6	NO	NA, NO	-0.26	-0.26	NA, NO	-0.11	-0.11	-0.12	–0.013	-1.6	NA, NO	NO	NO	NO
Hungary	47	47	NO	0.000	-0.63	-0.63	IE, NO	-0.16	-0.16	-0.23	–0.088	-0.65	NO	NO	NO	NO
Iceland	0.066	0.054	0.012	IE, NA, NO	-0.45	-0.45	IE, NA, NO	-0.11	-0.11	IE, NA, NO	IE, NA, NO	-0.60	-7.9	NO	NO	NO
Ireland	21	12	8.9	0.001	-0.67	-0.67	0.005	-0.13	-0.13	-0.012	–0.005	-0.23	-0.96	NA	NA	NA
Italy	70	70	NO	NA, NO	-2.5	-2.5	NA, NO	-0.54	-0.54	-0.15	–0.078	-4.4	NA, NO	NO	NO	NO
Japan	327	326	0.55	0.041	-0.87	-0.83	0.015	-0.22	-0.21	-0.11	-0.26	-0.004	-1.2	NA	NA	NA
Kazakhstan																
Latvia	103	81	22	NA, NO	-0.21	-0.21	NA, NO	-0.33	-0.33	-0.44	-0.63	-0.21	-4.2	NO	NO	NO
Liechtenstein	0.26	0.26	NO	0.25	-2.4	-2.2	0.081	-0.79	-0.71	-0.52	-0.27	-0.84	NO	NO	NO	NO
Lithuania	5.7	4.9	0.78	IE, NO	-3.7	-3.7	IE, NO	-0.87	-0.87	-0.41	-0.19	-4.6	-9.2	NO	NO	NO
Luxembourg	1.4	1.4	NO	0.17	-1.6	-1.4	IE, NA, NO	-0.34	-0.34	-0.29	–0.099	-1.2	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	72	7.2	0.85	-2.2	-1.3	0.30	-0.52	-0.22	-0.62	–0.050	0.094	-2.4	NO	NO	NO
New Zealand	214	213	0.91	0.087	-1.6	-1.5	0.052	-0.36	-0.31	-0.10	-0.15	0.49	-2.4	NA	NA	NA
Norway	178	166	12	0.19	-1.1	-0.87	0.034	-0.28	-0.24	-1.4	-0.80	-0.18	-5.5	NA	NA	NA
Poland	30	29	0.44	NO	-0.75	-0.75	NO	-0.17	-0.17	-0.29	–0.026	-1.8	-1.0	NO	NO	NO
Portugal	392	392	NO	0.058	-0.33	-0.27	0.030	-0.072	-0.041	-0.039	IE	-0.91	NO	NO	NO	NO
Romania	78	78	NO	IE, NO	-2.6	-2.6	IE, NO	IE, NO	IE, NO	-0.14	IE, NO	-1.3	NO	NO	NO	NO
Russian Federation	IE, NO	IE, NO	IE, NO	NO	IE, NO	IE, NO	NO	IE, NO	IE, NO	IE, NO	IE, NO	IE, NO	IE, NO	NO	NO	NO
Slovakia	9.1	9.1	NA, NO	NA, NO	-0.94	-0.94	NA, NO	-0.21	-0.21	-0.094	–0.088	-0.02	NA, NO	NA	NA	NA
Slovenia	27	27	NO	NA, NO	-0.82	-0.82	NA, NO	-0.12	-0.12	-0.11	–0.073	-1.3	NA	NO	NO	NO
Spain	131	131	NA, NO	IE, NA	-1.00	-1.00	IE, NA	IE, NA	IE, NA	-0.069	–0.027	-0.19	NA, NO	NA	NA	NA
Sweden	350	338	12	0.092	-0.75	-0.66	0.025	-0.25	-0.22	-0.37	0.001	-0.55	-1.4	NA	NA	NA
Switzerland	13	13	0.058	0.000	-2.0	-2.0	0.000	-0.61	-0.61	-0.48	-0.12	-0.94	-4.4			
Ukraine	50	50	NA, NO	NA	-0.023	-0.023	NA	-0.003	-0.003	-0.006	NA	-0.26	NA	NA	NA	NA
United Kingdom of Great Britain and Northern Ireland (KP)	87	61	25	0.001	-2.1	-2.1	IE, NA	IE, NA	IE, NA	-0.66	IE, NA	-2.7	-0.93	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 2020[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	12 890	12 890	IE, NA	0.16	-2.0	-1.9	0.06	IE, NA	0.055	-1.1	-2.2	0.27	IE, NA	NA	NA	NA	NA	NA	NA	IE, NA	IE	NA
Austria	3 804	3 804	NA, NO	1.9	-1.7	0.19	0.44	-0.43	0.013	IE, NA, NE, NO	0.006	-0.18	NA, NO	NA	NA	NA	NA	NA	NA	NO	NO	NO
Belgium	673	673	NA, NO	0.62	NA, NO	0.62	0.068	NA, NO	0.068	NA, NO	NA, NO	NA	NA, NO	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bulgaria	3 799	3 799	NO	0.50	IE, NO	0.50	IE, NO	IE, NO	IE, NO	NA, NO	0.079	NA, NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
Croatia	2 321	2 321	NA, NO	1.4	-0.85	0.56	0.34	-0.20	0.134	NA	NA	NA	NA, NO	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cyprus	158	158	NO	0.25	-0.031	0.22	0.070	-0.009	0.061	NO	0.003	NO	NO									
Czechia	2 608	2 589	19	2.3	-4.1	-1.8	0.49	-0.88	–0.393	0.41	0.15	0.027	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
Denmark (KP)	529	503	26	0.48	-0.007	0.47	0.024	-0.001	0.023	0.002	0.005	NA	-1.3	NA	NA	NA	NA	NA	NA	NA	NA	NA
Estonia	2 387	1 815	572	IE, NA	-0.10	–0.10	IE, NA	-0.022	–0.022	NA	0.015	0.15	-0.17	NA	NA	NA	NA	NA	NA	NA	NA	NA
European Union (KP)	153 741	141 831	11 910	1.0	-0.69	0.34	0.24	-0.17	0.069	0.001	0.038	0.073	-0.38	IE, NA, NO	IE, NA, NO	IE, NA, NO	IE, NA, NO	IE, NA, NO	IE, NA, NO	IE, NA, NO	IE, NA, NO	IE, NA, NO
Finland	21 606	15 744	5 862	1.4	-1.1	0.30	0.36	-0.31	0.055	IE, NA	IE, NA	0.089	-0.16	NA	NA	NA	NA	NA	NA	NA	NA	NA
France (KP)	20 593	20 593	IE	1.3	-1.1	0.12	0.36	-0.23	0.13	0.001	–0.019	0.001	IE	IE	IE	IE	IE	IE	IE	IE	IE	IE
Germany	10 692	10 439	253	0.64	IE, NA	0.64	0.11	IE, NA	0.11	-0.013	0.095	0.41	-2.7	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	1 879	1 873	6.5	0.59	IE, NA, NO	0.59	0.15	IE, NA, NO	0.15	NA, NE, NO	NA, NE, NO	NA, NE	-2.6	NA	NA	NA	NA	NA	NA	NA	NA	NA
Iceland	94	93	0.51	0.38	-0.008	0.37	0.12	IE, NA, NE	0.12	0.005	IE, NA, NO	0.012	-0.37	NO	NO	NO	NO	NO	NO	NO	NO	NO
Ireland	446	176	270	6.2	-5.6	0.62	1.8	-1.7	0.084	0.10	-0.14	-0.052	-1.6	NO	NO	NO	NO	NO	NO	NA	NA	NA
Italy	7 442	7 442	NA, NO	2.1	-1.4	0.69	0.43	-0.29	0.14	0.002	0.001	NA, NE, NO	NA, NO	NA	NA	NA	NA	NA	NA	NO	NO	NO
Japan	16 098	16 054	44	0.54	-0.013	0.53	0.14	-0.003	0.13	0.002	–0.032	0.019	NA, NO	NA	NA	NA	NA	NA	NA	NA	NA	NA
Kazakhstan																						
Latvia	3 121	2 742	379	2.3	-2.1	0.27	0.58	-0.51	0.066	0.002	–0.030	NA	-0.52	NA	NA	NA	NA	NA	NA	NA	NA	NA
Liechtenstein	6.2	6.2	NO	1.7	-1.4	0.22	0.54	-0.47	0.072	-0.043	0.025	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
Lithuania	2 165	1 871	294	0.55	IE, NA, NO	0.55	0.13	IE, NA, NO	0.13	0.003	0.18	NA, NE, NO	-1.5	IE	IE	IE	NO	NO	NO	NA	NA	NA
Luxembourg	92	92	NO	2.6	-1.8	0.78	0.55	-0.39	0.16	0	0.11	0	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
Malta	0.089	0.089	NO	0.017	NO	0.017	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	292	13	0.91	NO	0.91	0.19	NO	0.19	NE, NO	0.11	NA, NO	-0.91	NO	NO	NO	NO	NO	NO	NO	NO	NO
New Zealand	9 199	9 186	13	0.99	-0.77	0.22	0.22	-0.17	0.051	0.002	–0.008	0.000	-0.11	225	225	NO	63	63	NO	NA	NA	NA
Norway	12 015	11 319	696	0.86	-0.51	0.35	0.21	-0.13	0.080	0.11	0.021	0.003	-0.48	NA	NA	NA	NA	NA	NA	NA	NA	NA
Poland	8 646	8 307	338	0.38	IE, NA, NO	0.38	0.065	IE, NA, NO	0.065	NA, NO	0.14	0.094	-0.68	NO	NO	NO	NO	NO	NO	NA	NA	NA
Portugal	3 728	3 728	NO	1.6	-1.3	0.37	0.33	-0.17	0.16	-0.002	IE, NO	-0.006	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
Romania	6 943	6 941	2.5	1.7	-0.77	0.90	IE, NA, NO	IE, NA, NO	IE, NA, NO	NA, NE, NO	NA, NE, NO	NA, NE, NO	-2.6	NA	NA	NA	NA	NA	NA	NO	NO	NO
Russian Federation	IE, NA, NO	IE, NA, NO	IE, NA, NO	IE, NA, NO	IE, NA, NO	IE, NA, NO	IE, NA, NO	IE, NA, NO	IE, NA, NO	IE, NA, NO	IE, NA, NO	IE, NA, NO	IE, NA, NO	IE	IE	IE	NO	NO	NO	NA	NA	NA
Slovakia	1 977	1 977	NA, NO	2.0	-1.3	0.75	0.46	-0.28	0.18	NA	0.080	NA	NA, NO	NA	NA	NA	NA	NA	NA	NA	NA	NA
Slovenia	1 164	1 163	0.77	0.66	IE, NA	0.66	0.15	IE, NA	0.15	NA, NO	0.18	NA, NO	NA, NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
Spain	14 419	14 419	NA, NO	0.52	IE, NA, NO	0.52	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	27 902	24 430	3 472	0.22	IE, NO	0.22	0.072	IE, NO	0.072	-0.035	0.060	0.12	-0.42	NO	NO	NO	NO	NO	NO	NO	NO	NO
Switzerland	1 264	1 260	4.0	2.2	-1.7	0.46	0.63	-0.54	0.092	-0.072	0.015	0.002	-0.078									
Ukraine	9 599	9 406	193	1.7	-0.82	0.86	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)	3 001	2 601	401	3.2	-2.8	0.42	1.6	-1.5	0.13	0.029	0.30	0.47	0.13	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 2020[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	39 462	39 459	3.0	0.003	IE, NA	0.003	0.000	IE, NA	0.000	–0.000	–0.000	–0.014	-12
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)	2 857	2 744	113	0.058	-0.067	-0.009	0.013	-0.022	-0.009	NA	NA	0.013	-6.2
Estonia	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
European Union (KP)	53 275	52 600	675	0.037	-0.027	0.010	0.011	-0.02	-0.005	0.000	IE, NA, NE, NO	-0.036	-8.3
Finland	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
France (KP)	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	IE
Germany	13 279	12 934	345	0.064	-0.049	0.015	0.022	-0.028	-0.006	IE	NO	-0.099	-9.0
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													
Ireland	744	744	NO	0.013	-0.011	0.001	IE	IE	IE	NO	NO	0.04	NO
Italy	9 000	8 979	21	0.037	-0.061	-0.024	0.026	-0.041	-0.015	NA	NA	0.19	-10
Japan	3 954	3 810	145	0.003	-0.022	-0.019	0.000	-0.006	-0.006	NA	NA	-0.23	-2.2
Kazakhstan													
Latvia	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Liechtenstein	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
Lithuania	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Luxembourg	NA, NO	NA	NO	NA	NA	NA	NA	NA	NA	NO	NO	NA	NO
Malta	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
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	945	884	61	0.001	-0.004	-0.003	NO	NO	NO	NO	NO	0.018	-7.5
Poland	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Portugal	2 346	2 346	NO	0.034	-0.018	0.016	0.010	-0.013	-0.003	-0.001	IE	-0.050	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	20 192	20 192	NO	0.023	IE	0.023	IE	IE	IE	0.000	NO	0.021	NO
Sweden	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
Ukraine	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
United Kingdom of Great Britain and Northern Ireland (KP)	4 857	4 662	195	0.016	–0.002	0.015	IE, NA	IE, NA	IE, NA	NA	NA	-0.56	-8.0

[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	39 472	39 469	3.0	0.000	IE, NA	0.000	IE, NA	IE, NA	IE, NA	IE, NA	IE, NA	-0.19	-12
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)	2 998	2 864	134	0.028	-0.034	-0.006	0.007	-0.008	-0.001	NA	NA	-0.12	-8.3
Estonia	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
European Union (KP)	57 487	56 799	688	0.020	-0.023	-0.004	0.008	-0.011	-0.004	0.000	IE, NA, NO	-0.075	-8.8
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	13 597	13 261	336	0.017	-0.028	-0.011	0.007	-0.015	-0.008	IE, NO	NO	-0.029	-9.2
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	744	744	NO	0.037	-0.033	0.004	IE	IE	IE	NO	NO	0.032	NO
Italy	10 730	10 708	21	0.045	-0.076	-0.030	0.029	-0.040	-0.010	NA	NA	0.028	-10
Japan	4 591	4 442	150	0.000	-0.010	-0.009	0.000	-0.007	-0.007	NA	NA	-0.36	-2.3
Kazakhstan													
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, NO	NA	NO	NA	NA	NA	NA	NA	NA	NO	NO	NA	NO
Malta	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
Netherlands	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
New Zealand													
Norway	940	882	58	0.001	-0.004	-0.003	NO	NO	NO	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	0.007	IE	0.007	IE	IE	IE	0.000	NO	-0.004	NO
Sweden	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
Ukraine													
United Kingdom of Great Britain and Northern Ireland (KP)	5 446	5 248	198	0.018	–0.003	0.016	IE, NA	IE, NA	IE, NA	NA	NA	-0.56	-8.2

[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 2020[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	630 453	630 452	1.0	0.012	–0.004	0.008	0.003	-0.003	0.000	0.001	0.000	–0.002	-8.7
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)	182	102	80	0.13	-0.27	-0.14	0.35	-0.45	-0.093	NA	NA	0.13	-6.6
Estonia	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
European Union (KP)	30 149	25 908	4 241	0.038	–0.045	–0.007	0.020	–0.023	–0.002	0.000	IE, NA, NE, NO	0.19	-2.9
Finland	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
France (KP)	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	IE
Germany	7 022	6 012	1 010	0.15	-0.16	–0.010	0.076	–0.083	–0.006	IE	NO	0.36	-7.2
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													
Ireland	4 220	3 881	339	NO	–0.001	–0.001	IE, NO	NO	IE, NO	NO	NO	0.16	-6.8
Italy	3 949	3 949	NO	NO	NO	NO	NO	NO	NO	NE	NE	0.042	NO
Japan	618	577	40	0.003	-0.01	–0.008	0.012	-0.042	–0.030	NA	NA	–0.23	-0.22
Kazakhstan													
Latvia	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Liechtenstein	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
Lithuania	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Luxembourg	NA, NO	NA	NO	NA	NA	NA	NA	NA	NA	NO	NO	NA	NO
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	11 412	11 404	7.7	0.010	-0.004	0.006	0.003	–0.001	0.002	NO	NO	–0.001	-3.6
Poland	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Portugal	588	588	NO	0.034	–0.038	–0.004	0.026	–0.031	–0.005	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	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
United Kingdom of Great Britain and Northern Ireland (KP)	14 188	11 376	2 813	0.002	–0.011	–0.009	IE, NA	IE, NA	IE, NA	NA	NA	0.17	-0.73

[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	544 886	544 885	1.0	0.002	–0.006	–0.005	0.001	-0.001	0.000	0.002	0.000	0.000	-8.7
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	66	82	0.016	–0.022	–0.006	0.043	–0.049	–0.007	NA	NA	-0.76	-6.8
Estonia	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
European Union (KP)	29 167	24 866	4 301	0.013	–0.014	–0.002	0.003	–0.004	–0.001	–0.000	IE, NA, NE, NO	0.060	-2.8
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	6 177	5 198	979	0.013	–0.030	–0.018	0.010	–0.015	–0.005	IE, NO	NO	0.10	-7.7
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	4 403	4 026	377	NO	–0.000	–0.000	IE, NO	IE, NO	IE, NO	NO	NO	–0.014	-4.7
Italy	3 825.9	3 825.9	NO	NO	NO	NO	NO	NO	NO	NA, NE	NA, NE	-0.008	NO
Japan	646	607	39	0.005	IE	0.005	0.018	IE	0.018	NA	NA	-0.21	-0.19
Kazakhstan													
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, NO	NA	NO	NA	NA	NA	NA	NA	NA	NO	NO	NA	NO
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	11 465	11 458	6.9	0.010	–0.004	0.007	0.003	–0.001	0.002	NO	NO	0.001	-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	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ukraine													
United Kingdom of Great Britain and Northern Ireland (KP)	14 085	11 221	2 865	0.019	–0.014	0.006	IE, NA	IE, NA	IE, NA	NA	NA	0.13	-0.79

[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 2020[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	3 278	3 278	IE	0.024	–0.029	–0.005	0.016	-0.019	-0.003	IE	-0.002	-0.006	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)	420	420	NA, NE, NO	0.43	IE, NA, NE, NO	0.43	IE, NA, NE, NO	IE, NA, NE, NO	IE, NA, NE, NO	0.000	NA, NE, NO	0.40	NA, NE, NO
Finland	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
France (KP)	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
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	326	326	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	87	2.1	2.5	IE	2.5	0.65	IE	0.65	0.044	IE	0.96	NO
Kazakhstan													
Latvia	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Liechtenstein	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
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	94	94	NO	1.7	NO	1.7	IE	NO	IE, NO	0.001	NO	0.031	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	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
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	137	137	IE	0.031	–0.044	–0.014	0.020	-0.030	-0.009	IE	-0.005	-0.019	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)	277	277	NA, NO	1.0	IE, NA, NO	1.0	IE, NA, NO	IE, NA, NO	IE, NA, NO	0.024	NA, NO	0.91	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	185	185	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	5.9	5.8	0.14	2.2	IE	2.2	0.57	IE	0.57	0.043	IE	0.87	NO
Kazakhstan													
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	NO	3.0	IE	NO	IE, NO	0.071	NO	1.8	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	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
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 2020[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	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)	26	3.3	23	NA, NE, NO	NA, NE, NO	NA, NE, NO	NA, NE, NO	NA, NE, NO	NA, NE, NO	NA, NE, NO	NA, NE, NO	-3.4	-1.1
Finland	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
France (KP)	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NO	NE
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													
Latvia	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Liechtenstein	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
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	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
United Kingdom of Great Britain and Northern Ireland (KP)	26	3.3	23	NA, NO	NA, NO	NA, NO	NA, NO	NA, NO	NA, NO	NA, NO	NA, NO	-3.4	-1.1

[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)	26	15	11	NA, NO	NA, NO	NA, NO	NA, NO	NA, NO	NA, NO	NA, NO	NA, NO	-3.4	-1.4
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													
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	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ukraine													
United Kingdom of Great Britain and Northern Ireland (KP)	26	15	11	NA, NO	NA, NO	NA, NO	NA, NO	NA, NO	NA, NO	NA, NO	NA, NO	-3.4	-1.4

[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 N2O emissions from N fertilization for 2020[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					NO
Czechia	NO	NO	NO	NA	NA
Denmark (KP)	IE	IE	IE	NA	NA
Estonia	NO	NO	NO	NA	NA
European Union (KP)	22	IE, NO	0.000	0.010	NA, NE, NO
Finland	NA	IE	0.010	NA	NA
France (KP)	NO	NO	NE	NE	NE
Germany	NO	NO	NO	NA	NA
Greece	NA	NA	NA	NA	NA
Hungary	IE	IE	IE	NA	NA
Iceland	IE	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					
Latvia	NO	IE	NO	NA	NA
Liechtenstein	NO	NO	NO	NO	NO
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	NA
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)	0.014	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

CH4 and N2O emissions from drained and rewetted organic soils for 2020[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, NO	NA, NO	NA, NO	NA, NO	NA, NO	NA, NO	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	NA
Belgium	NO	NO	NO	NO	NO	NO	NO	NO	NO	NA		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	NA
Croatia	NA	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
Czechia	NO	NO	NO	NO	NO	NO	NO	NO	NO	NA		NA	NA		NA	NA	NA	NA	NA	NA	NA	NA
Denmark (KP)	11	1.4	4.0	0.48	1 348	60	26	2.8	4.0	117		33	92		86	NA	NA	NA	NA	NA	NA	NA
Estonia	6.1	0.92	11	NA	NA	NA	277	2.0	9.3	NA		NA	NA		NA	NA	NA	NA	NA	NA	NA	NA
European Union (KP)	381	1.7	6.2	124	8.1	60	6 933	1.4	8.6	656		32	2 152		53	NA, NE, NO	NA, NE, NO	NA, NE, NO	26	0.053	108	
Finland	82	1.3	2.3	49	1.4	17	4 226	0.91	6.4	NA		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	NE		NE	NE		NE	NE	NE	NE	NE	NE	NE	NE
Germany	25	2.7	4.8	12	1.4	185	253	2.8	4.9	345		15	1 010		42	NA	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	NA
Hungary	NO	NO	NO	NO	NO	NO	NO	NO	NO	NA		NA	NA		NA	NA	NA	NA	NA	NA	NA	NA
Iceland	3.5	0.44	7.4	0.012	0.44	7.4	0.51	0.44	7.4	NA		NA	NA		NA	NO	NA	NA	NA	NA	NA	NA
Ireland	166	1.4	6.3	8.9	1.5	54	244	1.3	6.5	NO		NO	348		29	NA	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	NA
Japan	NO	NO	NO	0.36	0.30	58	NO	NO	NO	18		58	1.8		68	NO	NO	NO	NA	NA	NA	NA
Kazakhstan																						
Latvia	2.8	2.8	67	17	13	60	417	2.5	35	NA		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
Lithuania	4.0	1.8	7.9	NO	NO	NO	149	1.8	7.9	NA		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	NA
Malta	NO	NO	NO	NO	NO	NO	NO	NO	NO	NA		NA	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
Netherlands	1.3	0.54	NE	NE	IE, NE	NE	3.1	0.54	NE	NA		NA	NA		NA	NA	NA	NA	NA	NA	NA	NA
New Zealand	2.0	64	NE	0.91	64	NE	2.1	64	NE	NE		NE	NE		NE	NE	NE	NE	NE	NE	NE	NE
Norway	4.4	2.8	15	12	1.3	52	128	2.8	15	59		57	7.7		63	NA	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	NA
Portugal	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO		NO	NO		NO	NA	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	NA
Russian Federation	NO	NO	NO	IE, NO	IE, NO	IE, NO	IE, NO	IE, NO	IE, NO	NA		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	NA
Slovenia	NO	NA	NA	NO	NA	NA	NO	NA	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	NA
Sweden	16	2.3	9.0	12	IE, NO	2.2	943	2.2	8.9	NA		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	NA
Ukraine	NO	NO	NO	NA	NA	NA	193	0.60	NA	NA		NA	NA		NA	NA	NA	NA	NA	NA	NA	NA
United Kingdom of Great Britain and Northern Ireland (KP)	63	2.8	7.9	24	1.7	114	395	2.8	7.9	194		61	703		77	NA	NA	NA	26	0.053	108	

[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 CH_4 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

N2O emissions from N mineralization/immobilization due to carbon loss/gain associated with land-use conversions and management change in mineral soils for 2020[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	9 053	–516	0.028	10 790	-3 374	0.037	12 890	3 523	0.003	1 735	-225	0.015	535 969	-1 679	0.001	NA	NA	NA
Austria	132	-67	0.47	34	-51	0.87	NO	NO	NO	NA	NA	NA	NA	NA	NA	NA	NA	NA
Belgium	19	–0.094	0.004	34	-39	0.65	NO	NO	NO	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bulgaria	83	-53	0.60	6.5	-13	1.4	NO	NO	NO	NA	NA	NA	NA	NA	NA	NA	NA	NA
Croatia	63	–16	NO	4.3	-7.0	1.4	NO	NO	NO	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cyprus													NO	NO	NO			
Czechia	NO	NO	NO	3.2	-0.41	0.085	NO	NO	NO	NA	NA	NA	NA	NA	NA	NA	NA	NA
Denmark (KP)	NO	NA	NA	15	3.0	0.094	504	NA	NA	2 744	22	0.003	102	7.1	0.047	NA	NA	NA
Estonia	45	7.5	NO	29.33	-30	0.71	1 815	281	NO	NA	NA	NA	NA	NA	NA	NA	NA	NA
European Union (KP)	3 056	-68	0.20	2 611	-556	1.9	50 372	7 548	0.002	17 855	-3 448	0.18	10 234	1 493	0.061	NA, NE, NO	NA, NE, NO	NA, NE, NO
Finland	120	NA	NA	360	96	0.15	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
France (KP)	NO	NO	NO	1 139	NA	0.52	NO	NO	NO	NE	NE	NE	NE	NE	NE	NE	NE	NE
Germany	301	89	0.11	123	–19	0.22	10 439	4 280	NO	12 934	-1 284	0.12	6 012	2 147	0.047	NA	NA	NA
Greece	NO	NA	NA	5.9	-9.6	1.1	NO	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hungary	105	1.9	0.035	45	-18	0.52	1 764	NO	NO	NA	NA	NA	NA	NA	NA	NA	NA	NA
Iceland	NO	NA	NA	0.054	-0.033	0.34	NO	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ireland	149	IE	NE	5.1	-5.5	72	176	NO	NO	IE	IE	IE	IE	IE	IE	NA	NA	NA
Italy	NO	NO	NO	3.7	82	15	NO	NO	NO	NO	47	NO	3 949	-167	NO	NA	NA	NA
Japan	NA	NA	NA	326	-6.1	0.021	16 054	-204	0.014	34	NA	0.46	15	NA	0.29	NA	NA	NA
Kazakhstan																		
Latvia	NO	NO	NO	61	-17	0.23	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Liechtenstein	NO	NO	NO	0.26		0.56	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
Lithuania	50	22	NO	4.9	-23	3.1	NO	NO	NO	NA	NA	NA	NA	NA	NA	NA	NA	NA
Luxembourg	NO	NO	NO	1.5	-1.6	1.1	NO	NO	NO	NA	NA	NA	NA	NA	NA	NA	NA	NA
Malta	NO	NO	NO	NO	NO	NO	NO	NO	NO	NA	NA	NA	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	43	0.98	0.15	72	6.7	0.16	NO	NO	NO	NA	NA	NA	NA	NA	NA	NA	NA	NA
New Zealand	688	142	0.14	217	5.6	0.017	9 660	29	0	NA	NA	NA	NA	NA	NA	NA	NA	NA
Norway	96	4.5	0.004	166	-30	0.13	11 319	30	NO	884	16	0.002	11 404	-13	0.001	NA	NA	NA
Poland	797	IE	0.029	0.35	IE	9 185	8 646	NE	NE	NA	NA	NA	NA	NA	NA	NA	NA	NA
Portugal	14	-30	1.4	94	-365	2.6	20	-40	1.3	84	-233	1.9	50	-128	1.7	NA	NA	NA
Romania	NO	NO	NO	78	99.7	0.54	NO	NO	NO	NA	NA	NA	NA	NA	NA	NO	NO	NO
Russian Federation	NO	NO	NO	IE	IE	IE	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	21	-56	2.1	NO	NO	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Spain	103	-3.0	0.30	73	-2.0	0.28	NE	NE	NE	331	-11	0.33	NA	NA	NA	NA	NA	NA
Sweden	318	-19	0.036	338	-187	0.24	23 665	3 027	NO	NA	NA	NA	NA	NA	NA	NA	NA	NA
Switzerland	0.90	0.034	0.025	8.7	12	0.92	NO	NO	NO	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ukraine	315	234	NA	50	-13	0.18	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
United Kingdom of Great Britain and Northern Ireland (KP)	711	IE, NO	0.38	58	IE, NO	2.3	3 345	IE, NO	0.018	1 763	-1 989	0.75	121	-366	2.1	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, N_2O emissions are converted to N_2O-N by multiplying by 28/44.

Table 6.7(a)

Emissions from biomass burning 2020[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		3.8	0.011	0.000		IE	0.15	0.003		1.6	0.091	0.002		IE	0.43	0.004
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		45	0.19	0.006						45	0.19	0.006				
Czechia		IE, NO	IE, NO	IE, NO		NO	NO	NO		IE, NO	IE, NO	IE, NO		0.000	0.000	0.000
Denmark (KP)		NA	NA	NA		NA	NA	NA		NA	NA	NA		NA	NA	NA
Estonia		IE, NA	NA, NO	NA, NO		NO	NO	NO		IE, NA, NO	NA, NO	NA, NO		IE, NO	0.072	0.001
European Union (KP)						97	1.3	0.024		182	1.3	0.024				
Finland		NA	NA	NA		NA	IE, NA	IE, NA		NA	IE, NA	IE, NA		IE	0.032	0.002
France (KP)																
Germany		IE, NO	IE, NO	IE, NO		NO	NO	NO		IE, NO	IE, NO	IE, NO		IE, NO	0.20	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		6.3	0.019	0.001
Ireland		152	0.66	0.004		NO	NO	NO		152	0.66	0.004		261	1.1	0.007
Italy		IE, NO	0.26	0.008		NO	NO	NO		IE, NO	0.26	0.008		IE, NO	0.26	0.008
Japan		IE, NO	0.000	0.000		NO	NO	NO		IE, NO	0.000	0.000		IE, NO	0.000	0.000
Kazakhstan																
Latvia		NO	NO	NO		NO	NO	NO		NO	NO	NO				
Liechtenstein		NO	NO	NO						NO	NO	NO				
Lithuania		NO	NO	NO		NO	NO	NO		NO	NO	NO		18	0.12	0.005
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		171	0.51	0.028		1.8	0.003	0.000		7.4	0.019	0.001		171	0.51	0.028
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	0.027	0.001		NO	NO	NO		IE, NO	0.027	0.001		IE	0.027	0.001
Poland		IE, NO	0.25	0.014		NO	NO	NO		IE, NO	0.25	0.014		IE, NO	0.25	0.014
Portugal																
Romania		IE, NO	IE, NO	IE, NO		NO	NO	NO		IE, NO	IE, NO	IE, NO		21	0.062	0.003
Russian Federation						NO	NO	NO		NO	NO	NO		IE	IE	IE
Slovakia		IE, NO	0.12	0.007		NO	NO	NO		IE, NO	0.12	0.007				
Slovenia		NA	NA	NA						NA	NA	NA				
Spain		13	0.067	0.005		10	0.024	0.002		13	0.067	0.005		IE	0.067	0.005
Sweden		NO	NO	NO		NO	NO	NO		NO	NO	NO		IE	0.053	0.000
Switzerland		IE	IE	IE		NO	NO	NO		IE, NO	IE, NO	IE, NO				
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				2020			
	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)		NA	NA	NA		NA	NA	NA
Estonia		NA	NA	NA		NA	NA	NA
European Union (KP)		4.1	0.077	0.003		4.19	0.079	0.004
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		4.8	0.026	0.001
Japan		IE, NO	0.000	0.000		IE, NO	0.000	0.000
Kazakhstan								
Latvia		NA	NA	NA		NA	NA	NA
Liechtenstein						NO	NO	NO
Lithuania		NA	NA	NA		NA	NA	NA
Luxembourg		NA	NA	NA		NA	NA	NA
Malta		NA	NA	NA		NA	NA	NA
Monaco		NO	NO	NO		NO	NO	NO
Netherlands		NA	NA	NA		NA	NA	NA
New Zealand						NA	NA	NA
Norway		NO	IE	IE		NO	IE	IE
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		0.12	0.029	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				2020			
	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	NA	NA		IE, NO	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		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)		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
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	0.006		39	0.23	0.006
Italy		NO	NO	NO		NO	NO	NO
Japan		NO	NO	NO		NO	NO	NO
Kazakhstan								
Latvia		NA	NA	NA		NA	NA	NA
Liechtenstein						NO	NO	NO
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		IE, NO	NE, NO	NE, NO		IE, NO	NE, NO	NE, 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		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)		NE, NO	NA	NA		NE, 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					2020			
	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)		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
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									
Latvia		NA, NO	NA	NA			NA, NO	NA	NA
Liechtenstein							NO	NO	NO
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				2020			
	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		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								
Latvia		NA	NA	NA		NA	NA	NA
Liechtenstein						NO	NO	NO
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).