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## Subsidiary Body for Implementation

Fifty-first session

Santiago, 2–9 December 2019

Item 3(c) of the provisional agenda

**Reporting from and review of Parties included in Annex I to the Convention**

**Reports on national greenhouse gas inventory data from Parties included in Annex I to the Convention for the periods 1990–2016 and 1990–2017**

## National greenhouse gas inventory data for the period 1990–2017

Report by the secretariat\*

### *Summary*

All 43 Parties included in Annex I to the Convention (Annex I Parties) submitted their greenhouse gas (GHG) inventory common reporting format tables and national inventory reports in 2019. By the deadline of 15 April 2019, common reporting format tables and national inventory reports from 39 Parties had been received. Over the period 1990–2017, total aggregate GHG emissions without emissions and removals from land use, land-use change and forestry (LULUCF) for all Annex I Parties decreased by 13.2 per cent, while total GHG emissions and removals with LULUCF decreased by 17.4 per cent. For Annex I Parties with economies in transition, GHG emissions without and with LULUCF decreased by 40.0 and 49.8 per cent, respectively. For Annex I Parties that do not have economies in transition, GHG emissions without and with LULUCF decreased by 1.6 and 2.9 per cent, respectively. The information in this document is based on information in the national GHG inventory submissions of Annex I Parties received as at 19 October 2019. At the time of the publication of this document, the annual review process for GHG inventories from Annex I Parties was still ongoing; therefore, the data included in this document may not reflect the latest information provided by Parties. The latest GHG inventory data are available on the UNFCCC website.

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\* This document was scheduled for publication after the standard publication date owing to circumstances beyond the submitter's control.



## Contents

	<i>Paragraphs</i>	<i>Page</i>
Abbreviations and acronyms .....		3
I. Introduction .....	1–5	4
A. Mandate .....	1	4
B. Scope .....	2–4	4
C. Possible action by the Subsidiary Body for Implementation .....	5	4
II. Status of reporting .....	6–10	4
A. Timeliness and completeness of submissions .....	6–7	4
B. Recalculations.....	8–10	5
III. Overview of emission trends and sources in Annex I Parties .....	11–28	7
A. Total aggregate greenhouse gas emissions .....	11–15	7
B. Greenhouse gas emissions by gas .....	16–18	10
C. Greenhouse gas emissions by sector.....	19–25	11
D. Emission data for individual Annex I Parties .....	26–28	13

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## Abbreviations and acronyms

Annex I Parties	Parties included in Annex I to the Convention
CH <sub>4</sub>	methane
COP	Conference of the Parties
CO <sub>2</sub>	carbon dioxide
CO <sub>2</sub> eq	CO <sub>2</sub> equivalent
CRF	common reporting format
EIT	economy in transition
F-gases	fluorinated gases
GHG	greenhouse gas
IPPU	industrial processes and product use
LULUCF	land use, land-use change and forestry
NIR	national inventory report
N <sub>2</sub> O	nitrous oxide
UNFCCC Annex I inventory reporting guidelines	“Guidelines for the preparation of national communications by Parties included in Annex I to the Convention, Part I: UNFCCC reporting guidelines on annual greenhouse gas inventories”

## I. Introduction

### A. Mandate

1. The COP, by decision 24/CP.19, requested Annex I Parties to submit national inventory data on GHG emissions by sources and removals by sinks by 15 April of each year. By decision 13/CP.20, paragraphs 8 and 10, the COP requested the secretariat to compile and summarize information on GHG inventory data submitted by Annex I Parties, inter alia, for consideration by the COP and the subsidiary bodies.

### B. Scope

2. This document shows the status of reporting of GHG inventories by Annex I Parties in 2019 (chapter II) and provides a summary of the latest available data on GHG emissions and removals for the period 1990–2017 (chapter III). Data are provided for CO<sub>2</sub>, CH<sub>4</sub> and N<sub>2</sub>O, as well as for F-gases,<sup>1</sup> and, where Parties have elected to report them, indirect CO<sub>2</sub> emissions from the atmospheric oxidation of CH<sub>4</sub>, carbon monoxide and non-methane volatile organic compounds. Data are provided on total<sup>2</sup> aggregate<sup>3</sup> GHG emissions, both without and with net GHG emissions and removals from LULUCF.

3. The information provided in this document is based on information in the national GHG inventories received from all 43 Annex I Parties (see table 1) as at 19 October 2019.

4. At the time of the publication of this document, the annual review process for GHG inventories from Annex I Parties was still ongoing; therefore, the data presented here may not reflect the latest information provided by Parties. The latest GHG inventory data are available on the UNFCCC website.<sup>4</sup>

### C. Possible action by the Subsidiary Body for Implementation

5. The Subsidiary Body for Implementation may wish to take note of the information contained in this document and to seek further guidance from the COP, as appropriate.

## II. Status of reporting

### A. Timeliness and completeness of submissions

6. According to the UNFCCC Annex I inventory reporting guidelines,<sup>5</sup> Annex I Parties are required to submit annually NIRs and CRF tables containing data from the base year up to two years prior to the year of submission. In 2019, all 43 Annex I Parties provided GHG data for all years from 1990<sup>6</sup> to 2017.

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<sup>1</sup> F-gases comprise hydrofluorocarbons, perfluorocarbons, sulfur hexafluoride, an unspecified mix of hydrofluorocarbons and perfluorocarbons and nitrogen trifluoride taken together.

<sup>2</sup> The term “total” implies that emissions from the sectors of the CRF are summed; the inclusion of emissions from LULUCF in the sum is indicated separately; unless stated otherwise, totals do not include indirect CO<sub>2</sub> emissions.

<sup>3</sup> The term “aggregate” implies that GHG emissions and removals are calculated as a weighted sum of CO<sub>2</sub>, CH<sub>4</sub>, N<sub>2</sub>O, hydrofluorocarbons, perfluorocarbons, sulfur hexafluoride, an unspecified mix of hydrofluorocarbons and perfluorocarbons and nitrogen trifluoride using the global warming potential values agreed under the Convention.

<sup>4</sup> <https://unfccc.int/process-and-meetings/transparency-and-reporting/reporting-and-review-under-the-convention/greenhouse-gas-inventories-annex-i-parties/national-inventory-submissions-2019>.

<sup>5</sup> Decision 24/CP.19, annex I.

<sup>6</sup> Unless otherwise specified, for certain Parties base-year data are used instead of 1990 data. The Parties that may use a base year other than 1990, as stipulated in decisions 9/CP.2 and 11/CP.4, are Bulgaria (1988), Hungary (average of 1985–1987), Poland (1988), Romania (1989) and Slovenia (1986).

7. By 15 April 2019, CRF tables from 39 Parties and NIRs from 38 Parties had been received. Within six weeks of that date, all 43 Parties had submitted their CRF tables and NIRs. After the initial submissions, 11 Parties submitted revised versions of their CRF tables and 10 Parties resubmitted their NIRs. The dates of the initial submissions of the CRF tables are shown in table 1.

Table 1  
**Greenhouse gas inventory submissions from Annex I Parties in 2019**

<i>Party</i>	<i>CRF tables submission date<sup>a</sup></i>	<i>Party</i>	<i>CRF tables submission date<sup>a</sup></i>
Australia	<i>24 May 2019</i>	Liechtenstein	15 April 2019
Austria	15 April 2019	Lithuania	12 April 2019
Belarus	12 April 2019	Luxembourg	4 April 2019
Belgium	15 April 2019	Malta	<i>10 May 2019</i>
Bulgaria	15 April 2019	Monaco	15 April 2019
Canada	15 April 2019	Netherlands	15 April 2019
Croatia	11 April 2019	New Zealand	10 April 2019
Cyprus	<i>16 April 2019</i>	Norway	12 April 2019
Czechia	12 April 2019	Poland	9 April 2019
Denmark	12 April 2019	Portugal	2 April 2019
Estonia	12 April 2019	Romania	15 April 2019
European Union	15 April 2019	Russian Federation	13 April 2019
Finland	10 April 2019	Slovakia	11 April 2019
France	3 April 2019	Slovenia	10 April 2019
Germany	12 April 2019	Spain	2 April 2019
Greece	15 April 2019	Sweden	12 April 2019
Hungary	15 April 2019	Switzerland	15 April 2019
Iceland	14 April 2019	Turkey	13 April 2019
Ireland	10 April 2019	Ukraine	<i>16 May 2019</i>
Italy	5 April 2019	United Kingdom	15 April 2019
Japan	15 April 2019	United States	13 April 2019
Latvia	12 April 2019		

<sup>a</sup> Dates after 15 April 2019 are shown in italics. The dates of submission of NIRs may be different.

## B. Recalculations

8. According to the UNFCCC Annex I inventory reporting guidelines, Parties should, where necessary, conduct recalculations in order to improve the quality of their emission estimates and ensure the consistency of the time series.

9. In 2019 all 43 Annex I Parties reported recalculations that had an impact on their estimated GHG emissions for 1990 (see table 2). The recalculations resulted from changes in activity data, emission factors and methodologies. For total aggregate GHG emissions without LULUCF, the change was less than 1 per cent for 37 Parties and more than 3 per cent for 2 Parties. For total aggregate GHG emissions with LULUCF, the change was less than 1 per cent for 21 Parties and more than 3 per cent for 8 Parties.

Table 2  
**Inventory recalculations by Annex I Parties in 2019**

<i>Party</i>	<i>Impact on GHG emissions for 1990 without LULUCF (%)</i>	<i>Impact on GHG emissions for 1990 with LULUCF (%)</i>
Australia	0.05	4.87
Austria	-0.03	-0.04
Belarus	0.0002	0.0002
Belgium	-0.05	-0.66
Bulgaria	0.0008	2.51
Canada	-0.17	-0.29
Croatia	-0.71	-1.05
Cyprus	1.39	1.77
Czechia	-0.04	0.66
Denmark	-0.12	0.09
Estonia	-0.02	0.12
European Union	0.06	0.34
Finland	-0.01	-1.33
France	0.31	1.09
Germany	-0.05	-0.05
Greece	0.00	0.01
Hungary	-0.11	-0.12
Iceland	-0.99	-5.26
Ireland	0.06	-2.58
Italy	-0.12	-0.17
Japan	0.26	0.27
Latvia	-0.64	4.43
Liechtenstein	-0.12	0.49
Lithuania	0.28	0.31
Luxembourg	-0.23	0.36
Malta	0.05	0.05
Monaco	1.90	1.90
Netherlands	0.09	0.28
New Zealand	-0.22	-4.88
Norway	-0.94	-0.22
Poland	1.06	1.13
Portugal	-1.23	-1.20
Romania	0.57	1.15
Russian Federation	-14.66	-20.03
Slovakia	-0.83	-1.19
Slovenia	-0.38	-2.47
Spain	0.29	1.74
Sweden	-0.30	3.71
Switzerland	0.10	-3.24
Turkey	4.03	-10.10
Ukraine	-0.91	-1.12
United Kingdom	-0.25	0.05
United States	0.24	0.51

10. Table 3 presents a comparison of the estimates of total aggregate GHG emissions in 1990 contained in Annex I Parties' 2018 and 2019 GHG inventory submissions.

Table 3

**Comparison of estimates reported in 2018 and 2019 of total aggregate greenhouse gas emissions of Annex I Parties in 1990**

	<i>Estimate reported in 2018</i>	<i>Estimate reported in 2019</i>	<i>Explanation of the difference between the estimates reported in 2018 and 2019</i>
<b>Total aggregate GHG emissions without LULUCF (thousands of Tg CO<sub>2</sub> eq)</b>			
All Annex I Parties	19.70	19.17	Aggregate impact of inventory recalculations by individual Annex I Parties
Annex I EIT Parties	6.36	5.81	Inventory recalculations, for example by Hungary, Russian Federation and Ukraine
Annex I non-EIT Parties	13.34	13.36	Inventory recalculations, for example by Japan, United Kingdom and United States
<b>Total aggregate GHG emissions with LULUCF (thousands of Tg CO<sub>2</sub> eq)</b>			
All Annex I Parties	18.68	17.94	Aggregate impact of inventory recalculations by individual Annex I Parties
Annex I EIT Parties	6.35	5.57	Inventory recalculations, for example by Poland, Russian Federation and Ukraine
Annex I non-EIT Parties	12.33	12.38	Inventory recalculations, for example by Australia, Turkey and United States

### III. Overview of emission trends and sources in Annex I Parties

#### A. Total aggregate greenhouse gas emissions

11. From 1990 to 2017, total aggregate GHG emissions without emissions and removals from LULUCF for all Annex I Parties decreased by 13.2 per cent, from 19,172.79 to 16,633.75 Mt CO<sub>2</sub> eq. During the same period, total aggregate GHG emissions with LULUCF decreased by 17.4 per cent, from 17,944.45 to 14,818.81 Mt CO<sub>2</sub> eq. From 2000 to 2017, GHG emissions without and with LULUCF decreased by 7.0 and 7.7 per cent, respectively. Between 2016 and 2017, GHG emissions increased by 0.3 per cent without LULUCF and by 0.8 per cent with LULUCF.

12. Figures 1 and 2 show the trends in total aggregate GHG emissions from 1990 to 2017 for all Annex I Parties taken together, for Annex I EIT Parties and for Annex I non-EIT Parties.

Figure 1  
**Greenhouse gas emissions of Annex I Parties, 1990, 1995, 2000, 2005, 2010, 2015, 2016 and 2017**

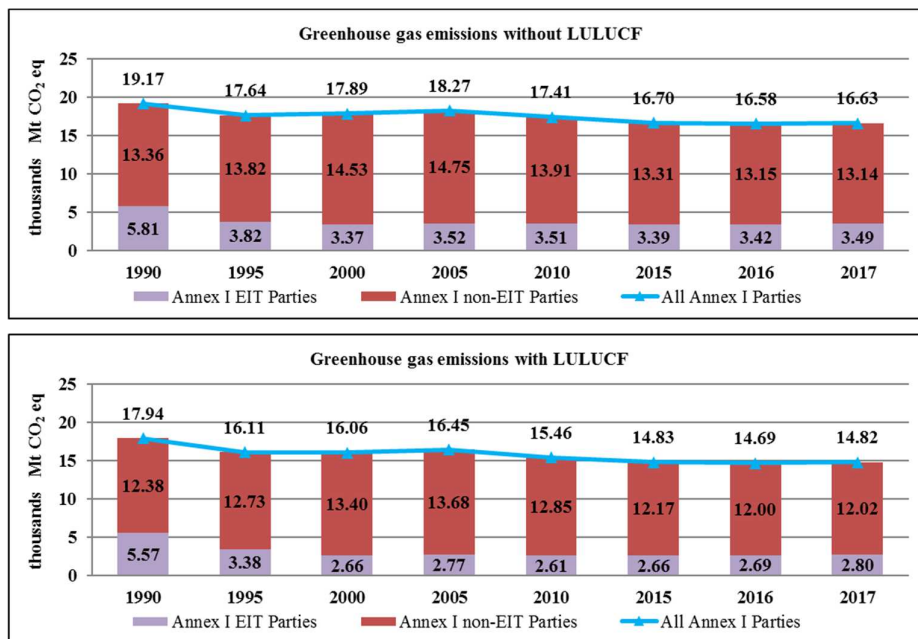
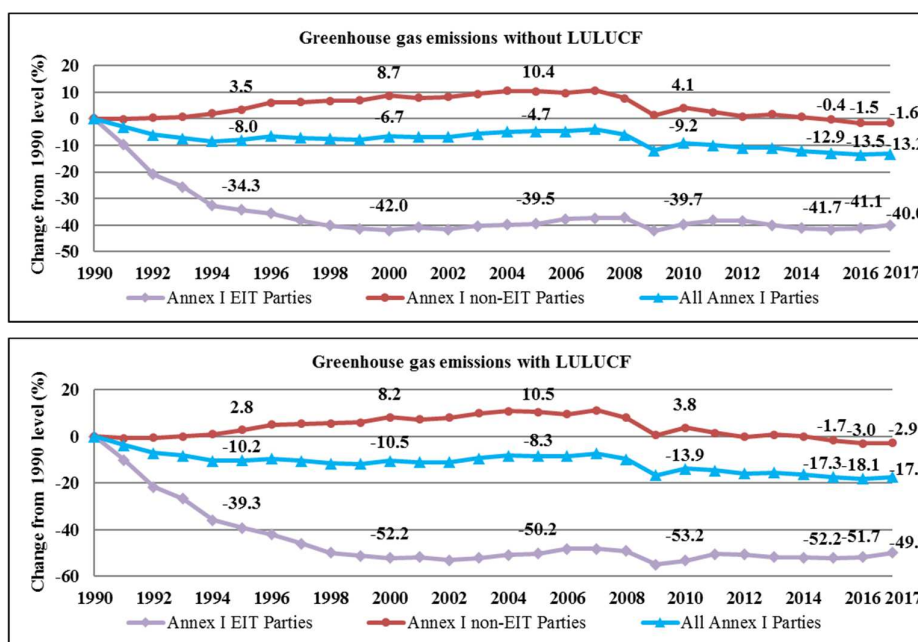


Figure 2  
**Changes in greenhouse gas emissions of Annex I Parties, 1990–2017**



13. For Annex I EIT Parties, GHG emissions from 1990 to 2017 decreased by 40.0 per cent without LULUCF and by 49.8 per cent with LULUCF. From 2000 to 2017, GHG emissions without and with LULUCF increased by 3.6 and 5.0 per cent, respectively. Between 2016 and 2017, GHG emissions without and with LULUCF increased by 2.0 and 3.9 per cent, respectively.

14. For Annex I non-EIT Parties, GHG emissions from 1990 to 2017 decreased by 1.6 per cent without LULUCF and by 2.9 per cent with LULUCF. From 2000 to 2017, GHG emissions without and with LULUCF decreased by 9.5 and 10.3 per cent, respectively.

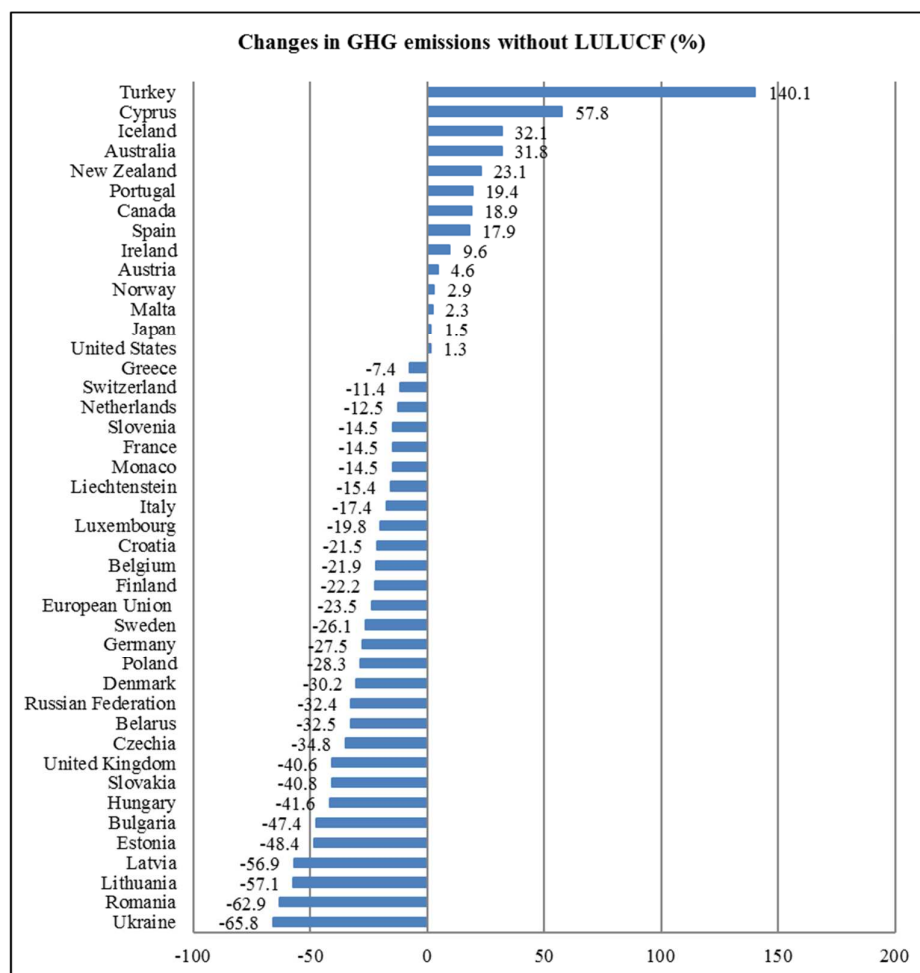


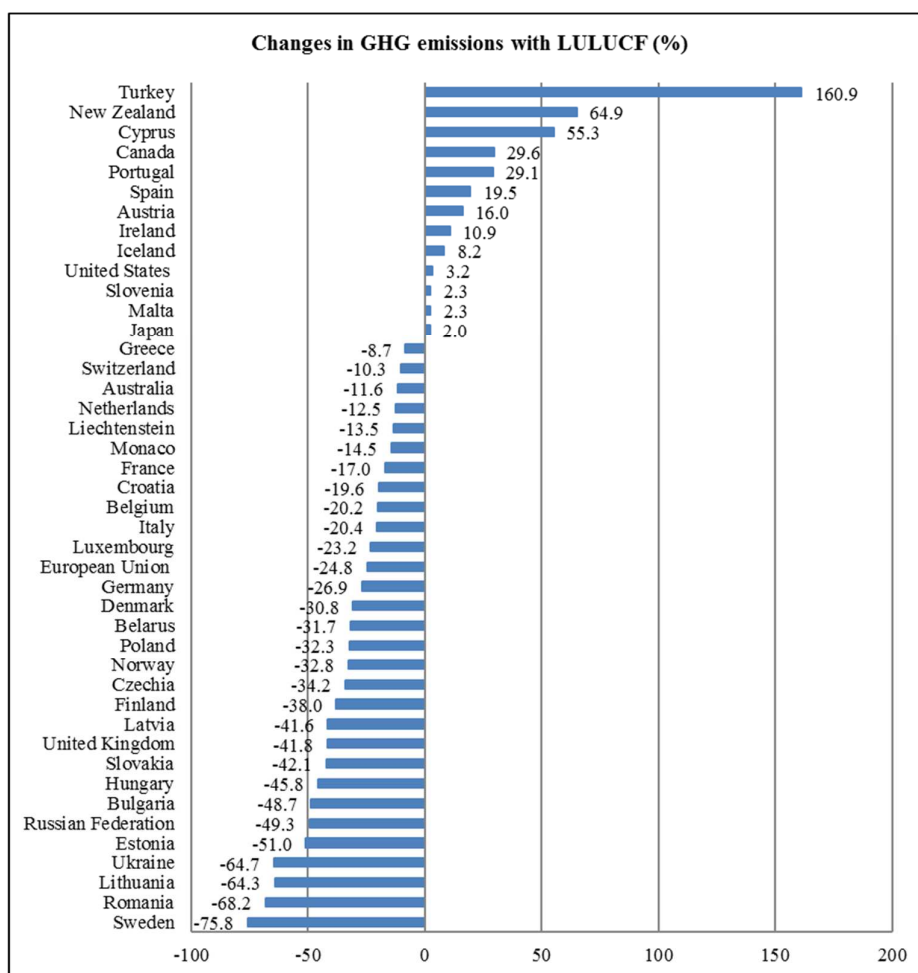
Between 2016 and 2017, GHG emissions showed a decrease of 0.1 per cent without LULUCF and an increase of 0.2 per cent with LULUCF.

15. The changes in total aggregate GHG emissions over the period 1990–2017 varied considerably among Parties (see figure 3). The largest decrease in emissions without LULUCF was in Ukraine (by 65.8 per cent), while the largest decrease in emissions with LULUCF was in Sweden (by 75.8 per cent). The greatest increases in emissions without and with LULUCF were in Turkey (by 140.1 per cent and 160.9 per cent respectively).

Figure 3

**Changes in total aggregate emissions of individual Annex I Parties, 1990–2017**



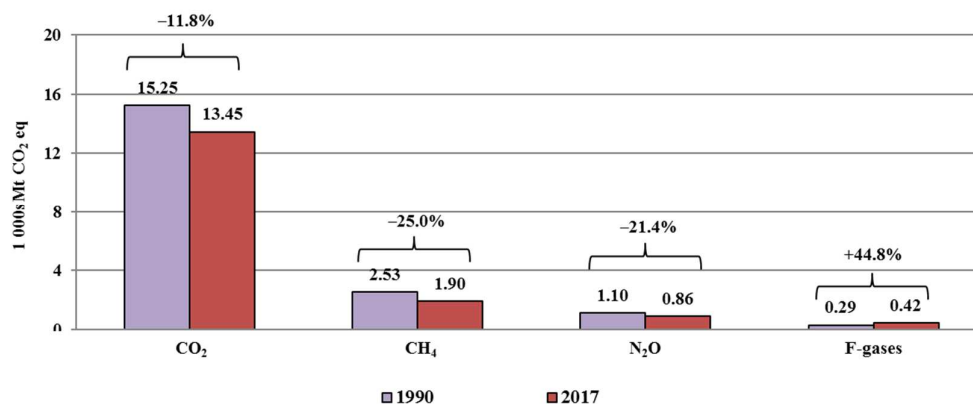


## B. Greenhouse gas emissions by gas

16. Throughout the period 1990–2017, CO<sub>2</sub> accounted for the largest share of total emissions, contributing 79.5 per cent in 1990 and 80.9 per cent in 2017. CH<sub>4</sub> was the second-highest contributor to total GHG emissions (13.2 per cent in 1990 and 11.4 per cent in 2017), followed by N<sub>2</sub>O (5.7 per cent in 1990 and 5.2 per cent in 2017). Emissions of F-gases contributed 1.5 per cent in 1990 and 2.5 per cent in 2017 to the total GHG emissions.

17. Figure 4 shows the contribution of each GHG to the total emissions without LULUCF for 1990 and 2017 and the changes in the total emissions of each GHG over the period 1990–2017. Emissions of CO<sub>2</sub>, CH<sub>4</sub> and N<sub>2</sub>O decreased, while emissions of F-gases increased by 44.8 per cent.

Figure 4  
**Greenhouse gas emissions without land use, land-use change and forestry of Annex I Parties by gas, 1990 and 2017**



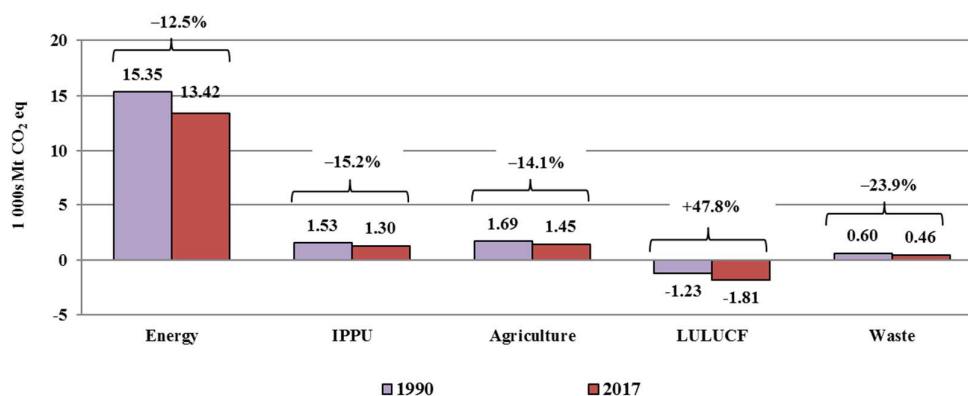
18. Between 2016 and 2017, emissions of CO<sub>2</sub>, CH<sub>4</sub>, N<sub>2</sub>O and F-gases increased by 0.1, 0.8, 0.7 and 4.0 per cent, respectively.

### C. Greenhouse gas emissions by sector

19. From 1990 to 2017, emissions from all sectors decreased (see figure 5). The waste sector experienced the largest relative decrease in emissions (by 23.9 per cent), followed by the IPPU, agriculture and energy sectors. Over the same period net GHG removals from LULUCF increased by 47.8 per cent, from -1,228.34 to -1,814.94 Mt CO<sub>2</sub> eq.

20. Between 2016 and 2017, emissions from the energy, IPPU and agriculture sectors increased by 0.1, 1.8 and 1.2 per cent, respectively, while emissions from the waste sector decreased by 0.3 per cent. Net GHG removals from LULUCF decreased by 3.6 per cent.

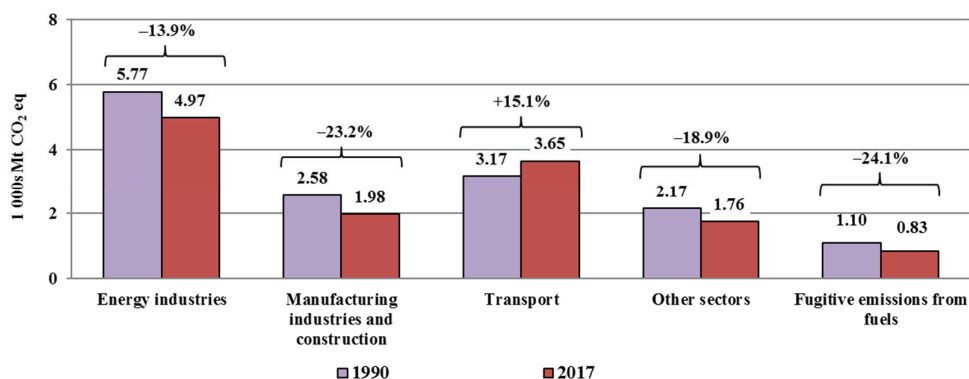
Figure 5  
**Greenhouse gas emissions and removals of Annex I Parties by sector, 1990 and 2017**



*Note:* The sector other is not included in this figure because its contribution to total GHG emissions was very small. The emissions from that sector decreased by 2.2 per cent between 1990 and 2017.

21. Within the energy sector, GHG emissions from 1990 to 2017 decreased in all subsectors except transport, where emissions increased by 15.1 per cent (see figure 6). The largest relative emission reduction occurred in fugitive emissions from fuels (where emissions decreased by 24.1 per cent).

Figure 6  
Greenhouse gas emissions of Annex I Parties in the energy sector, 1990 and 2017

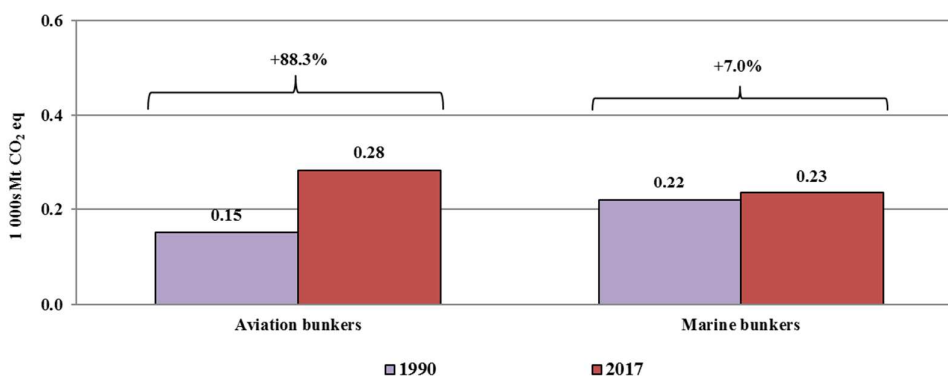


Note: The CO<sub>2</sub> transport and storage subsector is not included in this figure because its contribution to the total GHG emissions was very small. The emissions from that subsector increased by 8,661.4 per cent between 1990 and 2017.

22. Between 2016 and 2017, emissions from energy industries decreased by 2.1 per cent, whereas emissions from manufacturing industries and construction, transport, other sectors and fugitive emissions increased by 1.4, 1.2, 2.2 and 2.0 per cent, respectively.

23. Over the period 1990–2017 emissions from international bunkers increased by 88.3 per cent for aviation and by 7.0 per cent for navigation (see figure 7).

Figure 7  
Greenhouse gas emissions from international bunker fuels for Annex I Parties, 1990 and 2017



24. Between 2016 and 2017, emissions from international bunkers decreased by 5.2 per cent for aviation and decreased by 4.2 per cent for navigation.

25. A comparison of the percentage changes in total aggregate GHG emissions from 1990 to the latest available year reported in Annex I Parties' 2018 and 2019 inventory submissions is presented in table 4, with explanations for the differences in the estimates.

Table 4

**Comparison of the changes in the total aggregate greenhouse gas emissions of Annex I Parties reported in 2018 and 2019**

	<i>Estimate reported in 2018</i>	<i>Estimate reported in 2019</i>	<i>Explanation of the difference between the estimates reported in 2018 and 2019</i>
<b>Change in total aggregate GHG emissions without LULUCF from 1990 to the latest available year (%)</b>			
All Annex I Parties	-11.71	-13.24	Combined impact of changes for individual Annex I Parties
Annex I EIT Parties	-37.79	-39.95	Decreases in emissions between 2016 and 2017 and inventory recalculations, for example for Romania, Russian Federation and Ukraine
Annex I non-EIT Parties	0.73	-1.62	Decreases in emissions between 2016 and 2017 and inventory recalculations, for example for Belgium, Japan and United States
<b>Change in total aggregate GHG emissions with LULUCF from 1990 to the latest available year (%)</b>			
All Annex I Parties	-17.42	-17.42	Combined impact of changes for individual Annex I Parties
Annex I EIT Parties	-50.23	-49.79	Increases in emissions between 2016 and 2017 and inventory recalculations, for example for Belarus, Czechia and Poland
Annex I non-EIT Parties	0.54	-2.85	Decreases in emissions between 2016 and 2017 and inventory recalculations, for example for Germany, United Kingdom and United States

#### **D. Emission data for individual Annex I Parties**

26. Tables 5–17 show detailed GHG data for individual Annex I Parties. Total aggregate GHG emissions without and with emissions and removals from LULUCF are provided in tables 5 and 6; emissions of CO<sub>2</sub>, CH<sub>4</sub> and N<sub>2</sub>O (without and with emissions and removals from LULUCF) are provided in tables 7–12; emissions of F-gases are provided in table 13; emissions and removals from LULUCF are provided in tables 14–16; and indirect CO<sub>2</sub> emissions are provided in table 17.

27. Blank cells in the tables denote that either data were not available or notation keys, such as “NO” (not occurring), “NE” (not estimated), “NA” (not applicable), “IE” (included elsewhere) or “C” (confidential), were used to report emission data. Negative values denote removals; positive values denote emissions.

28. The changes in emissions from 1990 to 2017 were calculated using exact (not rounded) values and may therefore differ from a ratio calculated with the rounded numbers provided in the tables.

Table 5

**Total aggregate anthropogenic emissions of CO<sub>2</sub>, CH<sub>4</sub>, N<sub>2</sub>O and F-gases without emissions/removals from land use, land-use change and forestry, 1990, 2000, 2010, 2016 and 2017**

Party	kt CO <sub>2</sub> eq					Change from 1990 to 2017 (%)
	1990	2000	2010	2016	2017	
Australia	420 315	485 019	537 275	546 772	554 127	31.8
Austria	78 670	80 415	84 753	79 596	82 261	4.6
Belarus <sup>a</sup>	139 274	81 241	93 766	91 583	93 960	-32.5
Belgium	146 587	149 730	132 922	115 783	114 540	-21.9
Bulgaria <sup>a, b</sup>	116 754	59 567	60 550	59 085	61 367	-47.4
Canada	602 184	730 588	692 619	707 727	715 749	18.9
Croatia <sup>a</sup>	31 858	25 861	28 085	24 385	25 020	-21.5
Cyprus	5 669	8 387	9 459	8 741	8 945	57.8
Czechia <sup>a</sup>	197 393	149 334	139 734	129 757	128 675	-34.8
Denmark	70 515	71 368	64 178	51 298	49 226	-30.2
Estonia <sup>a</sup>	40 432	17 360	21 214	19 665	20 880	-48.4
European Union <sup>c</sup>	5 649 529	5 168 912	4 783 628	4 303 392	4 323 163	-23.5
Finland	71 133	70 130	75 627	58 044	55 334	-22.2
France	551 049	556 370	517 116	467 622	471 028	-14.5
Germany	1 250 993	1 045 187	942 542	911 049	906 611	-27.5
Greece	103 101	126 346	118 436	91 698	95 421	-7.4
Hungary <sup>a, b</sup>	109 314	73 208	64 949	61 140	63 788	-41.6
Iceland	3 598	4 038	4 845	4 640	4 755	32.1
Ireland	55 417	68 478	61 105	61 270	60 744	9.6
Italy	517 746	554 106	505 773	432 119	427 708	-17.4
Japan	1 270 004	1 374 847	1 302 732	1 305 751	1 289 631	1.5
Latvia <sup>a</sup>	26 259	10 488	12 279	11 269	11 306	-56.9
Liechtenstein	229	248	229	188	194	-15.4
Lithuania <sup>a</sup>	48 242	19 603	21 009	20 510	20 706	-57.1
Luxembourg	12 756	9 678	12 180	10 052	10 236	-19.8
Malta	2 103	2 768	2 910	1 896	2 152	2.3
Monaco	102	109	88	88	87	-14.5
Netherlands	220 794	219 304	213 363	195 384	193 260	-12.5
New Zealand	65 668	76 180	78 965	79 136	80 853	23.1
Norway	51 210	54 832	55 467	53 608	52 713	2.9
Poland <sup>a, b</sup>	577 258	395 472	411 669	399 123	413 781	-28.3
Portugal	59 092	82 082	68 801	65 936	70 546	19.4
Romania <sup>a, b</sup>	306 690	143 126	123 905	114 272	113 796	-62.9
Russian Federation <sup>a</sup>	3 186 796	1 900 820	2 057 673	2 097 477	2 155 471	-32.4
Slovakia <sup>a</sup>	73 365	49 263	46 367	42 298	43 438	-40.8
Slovenia <sup>a, b</sup>	20 415	19 076	19 626	17 681	17 453	-14.5
Spain	288 492	387 528	357 677	326 383	340 231	17.9
Sweden	71 304	68 483	64 282	52 943	52 660	-26.1
Switzerland	53 252	52 352	54 117	48 183	47 159	-11.4
Turkey <sup>d</sup>	219 202	298 890	398 661	498 469	526 253	140.1
Ukraine <sup>a</sup>	938 603	425 536	405 103	335 116	320 626	-65.8
United Kingdom	797 948	715 687	614 361	487 035	474 346	-40.6
United States	6 371 001	7 232 011	6 938 592	6 492 267	6 456 718	1.3
<i>Number of Parties showing a decrease in emissions by more than 1%:</i>						29
<i>Number of Parties showing a change in emissions within 1%:</i>						0
<i>Number of Parties showing an increase in emissions by more than 1%:</i>						14

<sup>a</sup> EIT Party.<sup>b</sup> Data for the base year defined by decisions 9/CP.2 and 11/CP.4 (Bulgaria (1988), Hungary (average of 1985–1987), Poland (1988), Romania (1989) and Slovenia (1986)) are used for this Party instead of 1990 data.<sup>c</sup> Emission estimates of the European Union are as reported for its 28 member States and are reported separately from those of each individual member State.<sup>d</sup> Decision 26/CP.7 invited Parties to recognize the special circumstances of Turkey, which place it in a situation different from that of other Annex I Parties.

Table 6

**Total aggregate anthropogenic emissions of CO<sub>2</sub>, CH<sub>4</sub>, N<sub>2</sub>O and F-gases with emissions/removals from land use, land-use change and forestry, 1990, 2000, 2010, 2016 and 2017**

Party	<i>kt CO<sub>2</sub> eq</i>					<i>Change from 1990 to 2017 (%)</i>
	1990	2000	2010	2016	2017	
Australia	604 904	536 154	585 955	530 431	534 695	-11.6
Austria	66 682	63 996	78 890	75 217	77 355	16.0
Belarus <sup>a</sup>	118 169	47 998	53 639	69 680	80 659	-31.7
Belgium	143 273	147 955	132 591	115 498	114 280	-20.2
Bulgaria <sup>a, b</sup>	104 064	47 379	50 722	50 810	53 335	-48.7
Canada	533 943	688 682	660 211	682 316	692 027	29.6
Croatia <sup>a</sup>	25 204	18 894	20 968	18 841	20 253	-19.6
Cyprus	5 418	8 455	8 970	8 817	8 411	55.3
Czechia <sup>a</sup>	192 167	141 446	134 195	124 599	126 540	-34.2
Denmark	75 454	74 968	63 162	55 801	52 197	-30.8
Estonia <sup>a</sup>	38 942	13 968	19 069	16 920	19 087	-51.0
European Union <sup>c</sup>	5 404 553	4 871 910	4 468 688	4 017 554	4 065 089	-24.8
Finland	56 361	51 245	53 478	39 518	34 956	-38.0
France	529 213	539 912	477 846	434 365	439 420	-17.0
Germany	1 219 681	1 007 227	926 173	897 140	891 426	-26.9
Greece	100 993	124 405	115 393	88 224	92 212	-8.7
Hungary <sup>a, b</sup>	107 557	72 801	60 937	56 837	58 349	-45.8
Iceland	13 005	13 425	14 317	13 985	14 075	8.2
Ireland	60 185	74 138	66 427	65 037	66 741	10.9
Italy	514 462	537 877	471 099	395 561	409 329	-20.4
Japan	1 207 528	1 286 939	1 232 185	1 251 231	1 232 173	2.0
Latvia <sup>a</sup>	16 431	1 736	12 357	10 962	9 599	-41.6
Liechtenstein	236	273	250	197	204	-13.5
Lithuania <sup>a</sup>	43 180	11 042	12 025	14 478	15 410	-64.3
Luxembourg	12 881	9 007	12 092	9 600	9 892	-23.2
Malta	2 106	2 771	2 912	1 899	2 155	2.3
Monaco	102	109	88	88	87	-14.5
Netherlands	227 285	225 376	218 932	200 963	198 860	-12.5
New Zealand	34 506	45 115	47 805	54 305	56 895	64.9
Norway	41 242	30 423	29 009	29 829	27 722	-32.8
Poland <sup>a, b</sup>	561 554	362 576	381 648	373 079	379 935	-32.3
Portugal	60 247	76 404	57 890	60 542	77 777	29.1
Romania <sup>a, b</sup>	289 617	122 214	103 187	91 167	92 116	-68.2
Russian Federation <sup>a</sup>	3 113 394	1 388 351	1 330 618	1 480 903	1 577 767	-49.3
Slovakia <sup>a</sup>	63 665	39 370	40 219	35 576	36 853	-42.1
Slovenia <sup>a, b</sup>	15 565	14 837	13 232	15 278	15 929	2.3
Spain	252 617	348 005	320 257	288 154	301 903	19.5
Sweden	36 908	31 888	20 336	8 405	8 933	-75.8
Switzerland	50 767	57 921	51 498	46 067	45 561	-10.3
Turkey <sup>d</sup>	163 437	237 334	325 169	402 539	426 345	160.9
Ukraine <sup>a</sup>	879 311	379 881	375 758	333 284	310 271	-64.7
United Kingdom	798 203	711 812	605 251	477 236	464 453	-41.8
United States	5 563 986	6 464 573	6 269 233	5 769 654	5 742 623	3.2
<i>Number of Parties showing a decrease in emissions by more than 1%:</i>						30
<i>Number of Parties showing a change in emissions within 1%:</i>						0
<i>Number of Parties showing an increase in emissions by more than 1%:</i>						13

<sup>a</sup> EIT Party.

<sup>b</sup> Data for the base year defined by decisions 9/CP.2 and 11/CP.4 (Bulgaria (1988), Hungary (average of 1985–1987), Poland (1988), Romania (1989) and Slovenia (1986)) are used for this Party instead of 1990 data.

<sup>c</sup> Emission estimates of the European Union are as reported for its 28 member States as a group and are reported separately from those of each individual member State.

<sup>d</sup> Decision 26/CP.7 invited Parties to recognize the special circumstances of Turkey, which place it in a situation different from that of other Annex I Parties.

Table 7

**Total anthropogenic CO<sub>2</sub> emissions without emissions/removals from land use, land-use change and forestry, 1990, 2000, 2010, 2016 and 2017**

Party	kt CO <sub>2</sub> eq					Change from 1990 to 2017 (%)
	1990	2000	2010	2016	2017	
Australia	278 424	350 195	406 426	413 157	417 041	49.8
Austria	62 323	66 313	72 228	67 315	69 979	12.3
Belarus <sup>a</sup>	104 139	55 463	63 883	60 942	62 699	-39.8
Belgium	120 482	126 769	113 814	98 422	97 564	-19.0
Bulgaria <sup>a, b</sup>	89 407	45 211	47 794	45 258	47 402	-47.0
Canada	462 502	571 507	556 420	564 068	571 139	23.5
Croatia <sup>a</sup>	23 337	19 699	21 064	18 083	18 717	-19.8
Cyprus	4 665	7 140	8 082	7 362	7 538	61.6
Czechia <sup>a</sup>	164 204	127 060	117 460	106 599	105 607	-35.7
Denmark	54 850	55 611	50 695	38 329	36 283	-33.9
Estonia <sup>a</sup>	37 067	15 360	19 016	17 477	18 654	-49.7
European Union <sup>c</sup>	4 469 107	4 180 838	3 941 225	3 497 546	3 515 490	-21.3
Finland	56 972	57 038	64 097	47 241	44 705	-21.5
France	403 207	419 301	394 447	349 248	352 285	-12.6
Germany	1 052 520	900 376	832 388	801 655	797 966	-24.2
Greece	83 375	102 982	97 343	71 367	74 845	-10.2
Hungary <sup>a, b</sup>	85 570	58 560	52 138	47 430	49 646	-42.0
Iceland	2 237	2 934	3 621	3 490	3 614	61.5
Ireland	32 891	45 200	41 678	39 895	38 728	17.7
Italy	439 640	470 294	426 351	353 487	348 991	-20.6
Japan	1 158 515	1 264 978	1 214 424	1 206 166	1 188 122	2.6
Latvia <sup>a</sup>	19 505	7 065	8 554	7 232	7 235	-62.9
Liechtenstein	199	217	191	149	155	-22.0
Lithuania <sup>a</sup>	35 810	11 880	13 964	13 368	13 628	-61.9
Luxembourg	11 848	8 729	11 217	9 076	9 243	-22.0
Malta	1 943	2 526	2 532	1 413	1 609	-17.2
Monaco	97	99	76	75	73	-24.5
Netherlands	162 428	171 943	182 186	166 387	164 478	1.3
New Zealand	25 455	32 298	34 997	34 260	36 024	41.5
Norway	35 323	42 515	46 229	44 463	43 702	23.7
Poland <sup>a, b</sup>	471 979	318 209	333 457	323 022	336 557	-28.7
Portugal	45 631	66 128	52 937	50 368	54 658	19.8
Romania <sup>a, b</sup>	208 946	95 428	84 022	75 798	74 998	-64.1
Russian Federation <sup>a</sup>	2 525 501	1 471 235	1 613 523	1 617 653	1 647 041	-34.8
Slovakia <sup>a</sup>	61 577	41 224	38 499	34 893	36 034	-41.5
Slovenia <sup>a, b</sup>	16 669	15 445	16 369	14 414	14 259	-14.5
Spain	231 061	310 828	283 109	260 289	274 427	18.8
Sweden	57 446	54 678	52 845	42 582	42 050	-26.8
Switzerland	44 162	43 612	45 043	39 187	38 172	-13.6
Turkey <sup>d</sup>	151 508	229 791	314 380	401 240	425 330	180.7
Ukraine <sup>a</sup>	705 832	285 338	294 079	234 204	223 220	-68.4
United Kingdom	601 481	567 902	512 672	400 554	388 101	-35.5
United States	5 121 179	5 997 299	5 700 108	5 306 662	5 270 749	2.9
<i>Number of Parties showing a decrease in emissions by more than 1%:</i>						29
<i>Number of Parties showing a change in emissions within 1%:</i>						0
<i>Number of Parties showing an increase in emissions by more than 1%:</i>						14

<sup>a</sup> EIT Party.<sup>b</sup> Data for the base year defined by decisions 9/CP.2 and 11/CP.4 (Bulgaria (1988), Hungary (average of 1985–1987), Poland (1988), Romania (1989) and Slovenia (1986)) are used for this Party instead of 1990 data.<sup>c</sup> Emission estimates of the European Union are as reported for its 28 member States as a group and are reported separately from those of each individual member State.<sup>d</sup> Decision 26/CP.7 invited Parties to recognize the special circumstances of Turkey, which place it in a situation different from that of other Annex I Parties.



Table 8  
**Total anthropogenic CO<sub>2</sub> emissions with emissions/removals from land use, land-use change and forestry, 1990, 2000, 2010, 2016 and 2017**

Party	<i>kt CO<sub>2</sub> eq</i>					<i>Change from 1990 to 2017 (%)</i>
	1990	2000	2010	2016	2017	
Australia	443 947	382 862	437 062	381 424	381 754	-14.0
Austria	50 166	49 735	66 206	62 775	64 910	29.4
Belarus <sup>a</sup>	83 012	22 192	23 736	39 019	49 378	-40.5
Belgium	117 157	124 944	113 381	97 979	97 141	-17.1
Bulgaria <sup>a, b</sup>	76 494	32 550	37 451	36 407	38 804	-49.3
Canada	392 956	528 082	522 974	537 732	546 532	39.1
Croatia <sup>a</sup>	16 649	12 534	13 865	12 443	13 751	-17.4
Cyprus	4 413	7 200	7 592	7 422	7 004	58.7
Czechia <sup>a</sup>	158 893	119 097	111 821	101 381	103 404	-34.9
Denmark	59 568	58 998	49 467	42 608	39 035	-34.5
Estonia <sup>a</sup>	35 275	11 661	16 549	14 404	16 533	-53.1
European Union <sup>c</sup>	4 197 475	3 856 491	3 601 333	3 185 039	3 231 149	-23.0
Finland	38 536	34 657	38 864	25 700	21 304	-44.7
France	377 135	397 899	350 826	311 708	316 366	-16.1
Germany	1 019 502	860 743	814 342	786 020	781 052	-23.4
Greece	81 198	100 806	94 266	67 846	71 601	-11.8
Hungary <sup>a, b</sup>	83 766	58 057	48 060	43 067	44 131	-47.3
Iceland	7 873	8 563	9 380	9 132	9 232	17.3
Ireland	37 053	50 228	45 927	42 884	43 630	17.7
Italy	434 050	452 453	390 908	316 117	328 643	-24.3
Japan	1 095 737	1 176 793	1 143 624	1 151 393	1 130 387	3.2
Latvia <sup>a</sup>	8 599	-2 782	7 580	5 790	4 378	-49.1
Liechtenstein	206	241	211	158	165	-19.6
Lithuania <sup>a</sup>	30 614	3 181	4 815	7 158	7 921	-73.4
Luxembourg	11 951	8 036	11 112	8 612	8 888	-25.6
Malta	1 946	2 529	2 534	1 417	1 612	-17.2
Monaco	97	99	76	75	73	-24.5
Netherlands	168 914	177 953	187 651	171 871	169 982	0.6
New Zealand	-6 012	914	3 542	9 194	11 865	-297.4
Norway	24 958	17 666	19 300	20 203	18 231	-27.0
Poland <sup>a, b</sup>	452 009	280 849	298 728	290 441	299 117	-33.8
Portugal	45 909	59 623	41 327	44 105	60 061	30.8
Romania <sup>a, b</sup>	190 633	72 790	61 461	50 849	51 473	-73.0
Russian Federation <sup>a</sup>	2 420 392	923 015	851 671	963 718	1 031 746	-57.4
Slovakia <sup>a</sup>	51 770	31 252	32 304	28 117	29 391	-43.2
Slovenia <sup>a, b</sup>	11 767	11 157	9 934	11 979	12 706	8.0
Spain	194 501	270 475	245 273	221 588	235 636	21.1
Sweden	21 283	16 290	7 159	-3 623	-3 332	-115.7
Switzerland	41 592	49 119	42 365	37 007	36 514	-12.2
Turkey <sup>d</sup>	95 617	167 959	240 823	305 175	325 291	240.2
Ukraine <sup>a</sup>	646 310	239 389	264 500	232 233	212 698	-67.1
United Kingdom	599 468	561 910	501 958	389 288	376 771	-37.1
United States	4 306 396	5 210 014	5 018 158	4 568 589	4 541 186	5.5
<i>Number of Parties showing a decrease in emissions by more than 1%:</i>						<i>31</i>
<i>Number of Parties showing a change in emissions within 1%:</i>						<i>1</i>
<i>Number of Parties showing an increase in emissions by more than 1%:</i>						<i>11</i>

<sup>a</sup> EIT Party.

<sup>b</sup> Data for the base year defined by decisions 9/CP.2 and 11/CP.4 (Bulgaria (1988), Hungary (average of 1985–1987), Poland (1988), Romania (1989) and Slovenia (1986)) are used for this Party instead of 1990 data.

<sup>c</sup> Emission estimates of the European Union are as reported for its 28 member States as a group and are reported separately from those of each individual member State.

<sup>d</sup> Decision 26/CP.7 invited Parties to recognize the special circumstances of Turkey, which place it in a situation different from that of other Annex I Parties.

Table 9

**Total anthropogenic CH<sub>4</sub> emissions without emissions/removals from land use, land-use change and forestry, 1990, 2000, 2010, 2016 and 2017**

Party	kt CO <sub>2</sub> eq					Change from 1990 to 2017 (%)
	1990	2000	2010	2016	2017	
Australia	120 081	112 761	102 501	102 048	103 602	-13.7
Austria	10 363	8 396	7 256	6 617	6 597	-36.3
Belarus <sup>a</sup>	18 744	13 507	15 982	16 721	16 875	-10.0
Belgium	12 198	11 008	8 789	8 073	7 973	-34.6
Bulgaria <sup>a, b</sup>	16 838	10 149	7 736	7 049	6 785	-59.7
Canada	89 032	112 546	92 742	93 165	92 848	4.3
Croatia <sup>a</sup>	4 424	3 524	4 191	4 224	4 108	-7.1
Cyprus	655	781	813	846	864	32.0
Czechia <sup>a</sup>	23 492	15 351	14 433	13 701	13 511	-42.5
Denmark	7 635	7 910	7 345	6 914	6 920	-9.4
Estonia <sup>a</sup>	1 896	1 236	1 216	1 065	1 071	-43.5
European Union <sup>c</sup>	727 449	605 491	490 359	454 079	453 422	-37.7
Finland	7 746	6 608	5 369	4 733	4 606	-40.5
France	69 642	69 765	61 656	57 090	56 659	-18.6
Germany	120 944	88 789	59 353	55 924	55 247	-54.3
Greece	10 907	11 630	11 001	9 665	9 915	-9.1
Hungary <sup>a, b</sup>	12 447	8 778	7 877	7 389	7 539	-39.4
Iceland	543	602	632	594	581	7.1
Ireland	14 761	14 346	12 069	13 715	14 034	-4.9
Italy	48 263	50 765	46 919	43 577	43 852	-9.1
Japan	44 347	37 951	34 497	30 504	30 064	-32.2
Latvia <sup>a</sup>	3 537	1 808	1 729	1 779	1 805	-49.0
Liechtenstein	19	17	19	18	18	-5.8
Lithuania <sup>a</sup>	7 006	3 861	3 685	3 335	3 285	-53.1
Luxembourg	580	584	591	586	594	2.3
Malta	105	175	180	184	187	78.1
Monaco	2	3	3	3	2	13.5
Netherlands	31 850	24 283	19 407	18 348	18 031	-43.4
New Zealand	32 150	35 223	34 221	34 196	34 132	6.2
Norway	5 801	5 698	5 380	5 093	5 024	-13.4
Poland <sup>a, b</sup>	75 727	53 114	51 380	49 487	49 413	-34.7
Portugal	9 606	11 162	10 348	9 431	9 477	-1.3
Romania <sup>a, b</sup>	74 074	36 329	31 037	29 012	28 725	-61.2
Russian Federation <sup>a</sup>	462 817	316 584	350 911	366 885	383 258	-17.2
Slovakia <sup>a</sup>	6 993	5 285	4 753	4 564	4 601	-34.2
Slovenia <sup>a, b</sup>	2 680	2 563	2 272	2 152	2 102	-21.6
Spain	35 233	42 497	40 322	39 468	40 013	13.6
Sweden	7 422	6 840	5 243	4 554	4 518	-39.1
Switzerland	6 005	5 286	5 127	4 917	4 854	-19.2
Turkey <sup>d</sup>	42 407	43 562	51 315	53 867	54 193	27.8
Ukraine <sup>a</sup>	182 442	117 892	84 497	65 967	63 638	-65.1
United Kingdom	132 991	108 901	64 298	51 508	51 884	-61.0
United States	779 846	709 304	697 450	654 898	656 317	-15.8
Number of Parties showing a decrease in emissions by more than 1%:						34
Number of Parties showing a change in emissions within 1%:						0
Number of Parties showing an increase in emissions by more than 1%:						9

<sup>a</sup> EIT Party.<sup>b</sup> Data for the base year defined by decisions 9/CP.2 and 11/CP.4 (Bulgaria (1988), Hungary (average of 1985–1987), Poland (1988), Romania (1989) and Slovenia (1986)) are used for this Party instead of 1990 data.<sup>c</sup> Emission estimates of the European Union are as reported for its 28 member States as a group and are reported separately from those of each individual member State.<sup>d</sup> Decision 26/CP.7 invited Parties to recognize the special circumstances of Turkey, which place it in a situation different from that of other Annex I Parties.

Table 10

**Total anthropogenic CH<sub>4</sub> emissions with emissions/removals from land use, land-use change and forestry, 1990, 2000, 2010, 2016 and 2017**

Party	<i>kt CO<sub>2</sub> eq</i>					<i>Change from 1990 to 2017 (%)</i>
	1990	2000	2010	2016	2017	
Australia	134 838	126 928	115 794	113 609	115 533	-14.3
Austria	10 387	8 419	7 280	6 641	6 621	-36.3
Belarus <sup>a</sup>	18 752	13 516	15 987	16 725	16 880	-10.0
Belgium	12 198	11 008	8 789	8 073	7 973	-34.6
Bulgaria <sup>a, b</sup>	16 839	10 284	7 751	7 064	6 795	-59.6
Canada	89 901	113 557	93 441	93 781	93 433	3.9
Croatia <sup>a</sup>	4 425	3 621	4 193	4 232	4 177	-5.6
Cyprus	655	788	814	858	864	32.0
Czechia <sup>a</sup>	23 536	15 393	14 489	13 734	13 549	-42.4
Denmark	7 828	8 098	7 529	7 107	7 112	-9.1
Estonia <sup>a</sup>	1 955	1 297	1 277	1 127	1 133	-42.1
European Union <sup>c</sup>	734 874	613 315	496 119	459 873	461 437	-37.2
Finland	9 280	7 956	6 347	5 654	5 526	-40.5
France	70 659	71 537	62 871	58 283	57 874	-18.1
Germany	121 820	89 660	60 221	56 789	56 111	-53.9
Greece	10 969	11 838	11 018	9 697	9 933	-9.4
Hungary <sup>a, b</sup>	12 472	8 804	7 886	7 398	7 558	-39.4
Iceland	4 263	4 304	4 285	4 236	4 222	-1.0
Ireland	15 222	14 775	12 695	14 097	14 672	-3.6
Italy	49 746	51 698	47 276	43 973	45 333	-8.9
Japan	44 432	38 031	34 569	30 571	30 154	-32.1
Latvia <sup>a</sup>	4 036	2 313	2 174	2 298	2 338	-42.1
Liechtenstein	19	17	19	18	18	-5.8
Lithuania <sup>a</sup>	7 009	3 865	3 687	3 336	3 285	-53.1
Luxembourg	580	584	591	586	594	2.3
Malta	105	175	180	184	187	78.1
Monaco	2	3	3	3	2	13.5
Netherlands	31 850	24 283	19 407	18 348	18 031	-43.4
New Zealand	32 248	35 307	34 322	34 302	34 225	6.1
Norway	5 946	5 848	5 532	5 245	5 175	-13.0
Poland <sup>a, b</sup>	75 771	53 146	51 412	49 529	49 450	-34.7
Portugal	9 906	11 496	10 643	9 882	10 736	8.4
Romania <sup>a, b</sup>	74 074	36 333	31 037	29 013	28 727	-61.2
Russian Federation <sup>a</sup>	484 006	336 869	373 656	389 689	406 169	-16.1
Slovakia <sup>a</sup>	7 003	5 309	4 771	4 583	4 622	-34.0
Slovenia <sup>a, b</sup>	2 681	2 563	2 272	2 153	2 103	-21.6
Spain	35 547	42 790	40 410	39 630	40 177	13.0
Sweden	7 893	7 315	5 693	4 992	4 953	-37.3
Switzerland	6 034	5 301	5 140	4 933	4 868	-19.3
Turkey <sup>d</sup>	42 483	43 721	51 338	53 927	54 251	27.7
Ukraine <sup>a</sup>	182 480	117 908	84 535	65 979	63 666	-65.1
United Kingdom	133 007	108 930	64 333	51 541	51 913	-61.0
United States	784 833	720 778	704 445	663 657	665 105	-15.3

*Number of Parties showing a decrease in emissions by more than 1%:*

33

*Number of Parties showing a change in emissions within 1%:*

1

*Number of Parties showing an increase in emissions by more than 1%:*

9

<sup>a</sup> EIT Party.

<sup>b</sup> Data for the base year defined by decisions 9/CP.2 and 11/CP.4 (Bulgaria (1988), Hungary (average of 1985–1987), Poland (1988), Romania (1989) and Slovenia (1986)) are used for this Party instead of 1990 data.

<sup>c</sup> Emission estimates of the European Union are as reported for its 28 member States as a group and are reported separately from those of each individual member State.

<sup>d</sup> Decision 26/CP.7 invited Parties to recognize the special circumstances of Turkey, which place it in a situation different from that of other Annex I Parties.

Table 11  
**Total anthropogenic N<sub>2</sub>O emissions without emissions/removals from land use, land-use change and forestry, 1990, 2000, 2010, 2016 and 2017**

Party	<i>kt CO<sub>2</sub> eq</i>					<i>Change from 1990 to 2017 (%)</i>
	1990	2000	2010	2016	2017	
Australia	15 558	18 950	19 312	19 172	20 851	34.0
Austria	4 329	4 320	3 366	3 582	3 505	-19.0
Belarus <sup>a</sup>	16 392	12 271	13 899	13 917	14 382	-12.3
Belgium	10 094	10 219	7 560	5 698	5 938	-41.2
Bulgaria <sup>a, b</sup>	10 506	4 167	4 338	5 360	5 345	-49.1
Canada	38 896	35 892	33 368	37 233	38 037	-2.2
Croatia <sup>a</sup>	2 847	2 479	2 441	1 589	1 700	-40.3
Cyprus	286	345	318	288	293	2.6
Czechia <sup>a</sup>	9 613	6 365	5 329	5 912	5 838	-39.3
Denmark	7 988	6 993	5 233	5 385	5 473	-31.5
Estonia <sup>a</sup>	1 469	682	805	884	916	-37.7
European Union <sup>c</sup>	380 966	302 513	237 135	232 931	237 733	-37.6
Finland	6 362	5 739	4 754	4 659	4 689	-26.3
France	66 360	55 281	42 135	40 759	42 129	-36.5
Germany	64 134	42 745	36 362	37 858	37 666	-41.3
Greece	7 443	6 346	5 489	4 301	4 351	-41.5
Hungary <sup>a, b</sup>	10 920	5 292	3 642	4 546	4 687	-57.1
Iceland	322	307	269	271	284	-11.8
Ireland	7 730	7 964	6 350	6 469	6 751	-12.7
Italy	26 084	28 445	18 826	17 944	17 796	-31.8
Japan	31 788	29 876	22 282	20 262	20 461	-35.6
Latvia <sup>a</sup>	3 217	1 600	1 823	2 007	2 021	-37.2
Liechtenstein	11	10	10	10	10	-10.8
Lithuania <sup>a</sup>	5 425	3 840	3 095	3 070	3 074	-43.3
Luxembourg	328	333	311	316	318	-3.0
Malta	55	59	50	42	44	-20.3
Monaco	2	3	4	3	3	30.1
Netherlands	18 040	16 152	8 634	8 487	8 721	-51.7
New Zealand	7 133	8 355	8 631	9 090	9 116	27.8
Norway	4 093	3 826	2 486	2 439	2 394	-41.5
Poland <sup>a, b</sup>	29 405	22 583	19 773	19 792	20 824	-29.2
Portugal	3 855	4 349	3 370	3 038	3 112	-19.3
Romania <sup>a, b</sup>	19 224	9 615	7 794	7 513	7 835	-59.2
Russian Federation <sup>a</sup>	146 044	75 644	75 160	84 615	86 429	-40.8
Slovakia <sup>a</sup>	4 480	2 621	2 473	2 155	2 048	-54.3
Slovenia <sup>a, b</sup>	823	877	706	726	702	-14.8
Spain	17 930	21 268	17 836	17 548	18 278	1.9
Sweden	5 759	5 701	4 807	4 569	4 870	-15.4
Switzerland	2 831	2 626	2 449	2 362	2 394	-15.4
Turkey <sup>d</sup>	24 661	24 808	29 426	37 068	38 535	56.3
Ukraine <sup>a</sup>	50 093	22 173	25 747	34 031	32 730	-34.7
United Kingdom	46 128	26 554	19 913	18 912	19 271	-58.2
United States	370 308	376 997	382 929	364 486	360 516	-2.6
<i>Number of Parties showing a decrease in emissions by more than 1%:</i>						37
<i>Number of Parties showing a change in emissions within 1%:</i>						0
<i>Number of Parties showing an increase in emissions by more than 1%:</i>						6

<sup>a</sup> EIT Party.

<sup>b</sup> Data for the base year defined by decisions 9/CP.2 and 11/CP.4 (Bulgaria (1988), Hungary (average of 1985–1987), Poland (1988), Romania (1989) and Slovenia (1986)) are used for this Party instead of 1990 data.

<sup>c</sup> Emission estimates of the European Union are as reported for its 28 member States as a group and are reported separately from those of each individual member State.

<sup>d</sup> Decision 26/CP.7 invited Parties to recognize the special circumstances of Turkey, which place it in a situation different from that of other Annex I Parties.

Table 12

**Total anthropogenic N<sub>2</sub>O emissions with emissions/removals from land use, land-use change and forestry, 1990, 2000, 2010, 2016 and 2017**

Party	<i>kt CO<sub>2</sub> eq</i>					<i>Change from 1990 to 2017 (%)</i>
	1990	2000	2010	2016	2017	
Australia	19 866	23 251	24 062	23 005	24 777	24.7
Austria	4 473	4 456	3 500	3 720	3 644	-18.5
Belarus <sup>a</sup>	16 406	12 290	13 915	13 933	14 398	-12.2
Belgium	10 105	10 269	7 661	5 856	6 101	-39.6
Bulgaria <sup>a, b</sup>	10 727	4 505	4 838	5 920	5 901	-45.0
Canada	39 331	36 400	33 707	37 542	38 337	-2.5
Croatia <sup>a</sup>	2 880	2 580	2 523	1 676	1 829	-36.5
Cyprus	286	348	318	292	293	2.6
Czechia <sup>a</sup>	9 653	6 399	5 372	5 939	5 868	-39.2
Denmark	8 015	7 020	5 260	5 416	5 501	-31.4
Estonia <sup>a</sup>	1 712	928	1 065	1 151	1 183	-30.9
European Union <sup>c</sup>	400 196	322 034	256 327	253 807	255 984	-36.0
Finland	8 493	7 888	6 860	6 753	6 792	-20.0
France	69 578	58 452	45 273	43 848	45 224	-35.0
Germany	64 964	43 546	37 171	38 718	38 531	-40.7
Greece	7 450	6 373	5 507	4 318	4 367	-41.4
Hungary <sup>a, b</sup>	10 943	5 362	3 699	4 598	4 744	-56.6
Iceland	374	362	329	332	346	-7.4
Ireland	7 875	8 167	6 797	6 866	7 209	-8.5
Italy	26 907	29 123	19 238	18 360	18 285	-32.0
Japan	32 005	30 074	22 463	20 447	20 650	-35.5
Latvia <sup>a</sup>	3 795	2 190	2 430	2 623	2 639	-30.5
Liechtenstein	11	10	10	10	10	-9.6
Lithuania <sup>a</sup>	5 557	3 974	3 260	3 247	3 263	-41.3
Luxembourg	349	354	328	328	329	-5.6
Malta	55	59	50	42	44	-20.3
Monaco	2	3	4	3	3	29.9
Netherlands	18 045	16 213	8 738	8 582	8 817	-51.1
New Zealand	7 340	8 591	8 825	9 219	9 223	25.7
Norway	4 344	4 116	2 806	2 767	2 723	-37.3
Poland <sup>a, b</sup>	33 626	27 014	24 450	26 287	24 380	-27.5
Portugal	4 432	4 842	3 774	3 457	3 680	-17.0
Romania <sup>a, b</sup>	20 465	11 337	9 636	9 356	9 678	-52.7
Russian Federation <sup>a</sup>	156 562	91 110	87 212	99 171	101 110	-35.4
Slovakia <sup>a</sup>	4 577	2 676	2 503	2 191	2 085	-54.4
Slovenia <sup>a, b</sup>	874	926	747	756	729	-16.6
Spain	18 301	21 806	18 164	17 858	18 577	1.5
Sweden	7 055	7 018	6 096	5 798	6 090	-13.7
Switzerland	2 887	2 674	2 495	2 411	2 440	-15.5
Turkey <sup>d</sup>	24 711	24 924	29 468	37 143	38 609	56.2
Ukraine <sup>a</sup>	50 286	22 451	25 943	34 158	32 869	-34.6
United Kingdom	48 380	28 642	21 483	20 346	20 679	-57.3
United States	373 090	385 370	388 527	371 186	367 195	-1.6
<i>Number of Parties showing a decrease in emissions by more than 1%:</i>						37
<i>Number of Parties showing a change in emissions within 1%:</i>						0
<i>Number of Parties showing an increase in emissions by more than 1%:</i>						6

<sup>a</sup> EIT Party.<sup>b</sup> Data for the base year defined by decisions 9/CP.2 and 11/CP.4 (Bulgaria (1988), Hungary (average of 1985–1987), Poland (1988), Romania (1989) and Slovenia (1986)) are used for this Party instead of 1990 data.<sup>c</sup> Emission estimates of the European Union are as reported for its 28 member States as a group and are reported separately from those of each individual member State.<sup>d</sup> Decision 26/CP.7 invited Parties to recognize the special circumstances of Turkey, which place it in a situation different from that of other Annex I Parties.

Table 13

**Total aggregate anthropogenic emissions of F-gases, 1990, 2000, 2010, 2016 and 2017**

Party	kt CO <sub>2</sub> eq					Change from 1990 to 2017 (%)
	1990	2000	2010	2016	2017	
Australia	6 252	3 113	9 037	12 393	12 632	102.0
Austria	1 656	1 387	1 904	2 082	2 180	31.6
Belarus <sup>a</sup>		0.1	2	3	3	
Belgium	3 813	1 734	2 759	3 590	3 066	-19.6
Bulgaria <sup>a, b</sup>	3	40	682	1 419	1 835	-
Canada	11 755	10 643	10 089	13 260	13 725	16.8
Croatia <sup>a</sup>	1 251	160	388	490	495	-60.4
Cyprus	64	120	246	245	250	290.8
Czechia <sup>a</sup>	84	558	2 512	3 545	3 719	4315.1
Denmark	42	853	906	670	549	1195.5
Estonia <sup>a</sup>		82	177	238	239	
European Union <sup>c</sup>	72 008	80 070	114 909	118 836	116 519	61.8
Finland	53	744	1 407	1 412	1 335	2432.0
France	11 840	12 024	18 877	20 525	19 956	68.6
Germany	13 395	13 278	14 440	15 612	15 732	17.5
Greece	1 376	5 388	4 603	6 364	6 310	358.6
Hungary <sup>a, b</sup>	377	578	1 292	1 775	1 916	407.9
Iceland	496	194	322	285	275	-44.6
Ireland	35	968	1 008	1 191	1 231	3393.8
Italy	3 759	4 602	13 678	17 111	17 068	354.0
Japan	35 354	42 042	31 529	48 820	50 982	44.2
Latvia <sup>a</sup>		15	173	251	245	
Liechtenstein	0.0001	4	10	11	11	-
Lithuania <sup>a</sup>		23	264	737	719	
Luxembourg	1	33	61	75	81	9149.3
Malta	0.01	8	147	257	312	-
Monaco	0.2	4	5	7	8	3702.7
Netherlands	8 476	6 927	3 136	2 162	2 030	-76.1
New Zealand	930	303	1 116	1 590	1 581	70.0
Norway	5 993	2 793	1 372	1 613	1 593	-73.4
Poland <sup>a, b</sup>	147	1 566	7 059	6 822	6 988	4645.2
Portugal		443	2 146	3 098	3 299	
Romania <sup>a, b</sup>	4 447	1 754	1 052	1 949	2 237	-49.7
Russian Federation <sup>a</sup>	52 433	37 357	18 078	28 324	38 742	-26.1
Slovakia <sup>a</sup>	315	133	642	686	755	139.7
Slovenia <sup>a, b</sup>	243	191	280	390	391	60.8
Spain	4 268	12 935	16 410	9 078	7 513	76.0
Sweden	677	1 264	1 387	1 238	1 222	80.5
Switzerland	254	828	1 498	1 717	1 740	586.1
Turkey <sup>d</sup>	625	730	3 539	6 294	8 195	1210.6
Ukraine <sup>a</sup>	236	132	780	913	1 038	340.1
United Kingdom	17 349	12 330	17 477	16 061	15 090	-13.0
United States	99 668	148 411	158 104	166 221	169 137	69.7
<i>Number of Parties showing a decrease in emissions by more than 1%:</i>						8
<i>Number of Parties showing a change in emissions within 1%:</i>						0
<i>Number of Parties showing an increase in emissions by more than 1%:</i>						27

Note: An en dash (–) signifies a percentage change exceeding 10,000 per cent.

<sup>a</sup> EIT Party.

<sup>b</sup> Data for the base year defined by decisions 9/CP.2 and 11/CP.4 (Bulgaria (1988), Hungary (average of 1985–1987), Poland (1988), Romania (1989) and Slovenia (1986)) are used for this Party instead of 1990 data.

<sup>c</sup> Emission estimates of the European Union are as reported for its 28 member States as a group and are reported separately from those of each individual member State.

<sup>d</sup> Decision 26/CP.7 invited Parties to recognize the special circumstances of Turkey, which place it in a situation different from that of other Annex I Parties.

Table 14

**Net anthropogenic CO<sub>2</sub> emissions/removals from land use, land-use change and forestry, 1990, 2000, 2010, 2016 and 2017**

Party	kt CO <sub>2</sub> eq					Change from 1990 to 2017 (%)
	1990	2000	2010	2016	2017	
Australia	165 523	32 667	30 636	-31 734	-35 287	-121.3
Austria	-12 157	-16 578	-6 022	-4 540	-5 069	-58.3
Belarus <sup>a</sup>	-21 127	-33 271	-40 148	-21 923	-13 321	-36.9
Belgium	-3 325	-1 825	-433	-443	-422	-87.3
Bulgaria <sup>a, b</sup>	-12 913	-12 661	-10 344	-8 851	-8 598	-33.4
Canada	-69 546	-43 425	-33 446	-26 337	-24 607	-64.6
Croatia <sup>a</sup>	-6 689	-7 166	-7 200	-5 640	-4 965	-25.8
Cyprus	-251	59	-490	60	-535	112.7
Czechia <sup>a</sup>	-5 310	-7 963	-5 639	-5 218	-2 203	-58.5
Denmark	4 718	3 386	-1 227	4 278	2 752	-41.7
Estonia <sup>a</sup>	-1 792	-3 699	-2 466	-3 074	-2 121	18.4
European Union <sup>c</sup>	-271 631	-324 347	-339 892	-312 507	-284 341	4.7
Finland	-18 436	-22 382	-25 233	-21 541	-23 401	26.9
France	-26 072	-21 402	-43 621	-37 539	-35 919	37.8
Germany	-33 018	-39 633	-18 045	-15 634	-16 914	-48.8
Greece	-2 177	-2 176	-3 077	-3 522	-3 243	49.0
Hungary <sup>a, b</sup>	-1 804	-503	-4 078	-4 363	-5 515	205.8
Iceland	5 635	5 629	5 759	5 642	5 618	-0.3
Ireland	4 162	5 028	4 249	2 989	4 902	17.8
Italy	-5 590	-17 841	-35 443	-37 370	-20 349	264.0
Japan	-62 778	-88 185	-70 800	-54 772	-57 735	-8.0
Latvia <sup>a</sup>	-10 906	-9 847	-974	-1 442	-2 858	-73.8
Liechtenstein	7	24	20	9	10	52.5
Lithuania <sup>a</sup>	-5 197	-8 699	-9 150	-6 210	-5 485	5.6
Luxembourg	103	-693	-105	-464	-355	-444.2
Malta	3	3	2	3	4	23.1
Monaco	-0.01	-0.05	-00.06	-0.02	-0.01	45.1
Netherlands	6 486	6 010	5 465	5 484	5 504	-15.1
New Zealand	-31 467	-31 385	-31 455	-25 065	-24 158	-23.2
Norway	-10 365	-24 849	-26 930	-24 259	-25 471	145.7
Poland <sup>a, b</sup>	-19 969	-37 360	-34 730	-32 581	-37 440	87.5
Portugal	278	-6 505	-11 609	-6 263	5 404	1844.5
Romania <sup>a, b</sup>	-18 314	-22 638	-22 561	-24 949	-23 525	28.5
Russian Federation <sup>a</sup>	-105 110	-548 220	-761 852	-653 934	-615 295	485.4
Slovakia <sup>a</sup>	-9 807	-9 973	-6 196	-6 777	-6 642	-32.3
Slovenia <sup>a, b</sup>	-4 902	-4 288	-6 435	-2 435	-1 553	-68.3
Spain	-36 560	-40 354	-37 835	-38 701	-38 791	6.1
Sweden	-36 163	-38 388	-45 686	-46 205	-45 382	25.5
Switzerland	-2 571	5 507	-2 678	-2 180	-1 658	-35.5
Turkey <sup>d</sup>	-55 891	-61 832	-73 557	-96 065	-100 039	79.0
Ukraine <sup>a</sup>	-59 523	-45 949	-29 579	-1 971	-10 522	-82.3
United Kingdom	-2 012	-5 992	-10 715	-11 266	-11 330	463.1
United States	-814 784	-787 285	-681 951	-738 074	-729 563	-10.5
Number of Parties showing a decrease in emissions by more than 1%:						20
Number of Parties showing a change in emissions within 1%:						1
Number of Parties showing an increase in emissions by more than 1%:						22

<sup>a</sup> EIT Party.<sup>b</sup> Data for the base year defined by decisions 9/CP.2 and 11/CP.4 (Bulgaria (1988), Hungary (average of 1985–1987), Poland (1988), Romania (1989) and Slovenia (1986)) are used for this Party instead of 1990 data.<sup>c</sup> Emission estimates of the European Union are as reported for its 28 member States as a group and are reported separately from those of each individual member State.<sup>d</sup> Decision 26/CP.7 invited Parties to recognize the special circumstances of Turkey, which place it in a situation different from that of other Annex I Parties.

Table 15  
**Anthropogenic CH<sub>4</sub> emissions from land use, land-use change and forestry, 1990, 2000, 2010, 2016 and 2017**

Party	<i>kt CO<sub>2</sub> eq</i>					<i>Change from 1990 to 2017 (%)</i>
	1990	2000	2010	2016	2017	
Australia	14 757	14 167	13 293	11 560	11 930	-19.2
Austria	24	24	24	24	24	-1.6
Belarus <sup>a</sup>	8	9	5	5	5	-40.0
Belgium	1	0.002				
Bulgaria <sup>a, b</sup>	1	135	15	15	11	889.0
Canada	869	1 011	700	616	585	-32.7
Croatia <sup>a</sup>	1	97	2	9	69	5526.8
Cyprus	0.05	7	1	12	0.4	622.0
Czechia <sup>a</sup>	44	41	57	33	38	-13.7
Denmark	193	188	185	194	192	-0.8
Estonia <sup>a</sup>	60	61	61	62	62	3.3
European Union <sup>c</sup>	7 425	7 824	5 760	5 793	8 015	7.9
Finland	1 534	1 348	978	921	920	-40.0
France	1 018	1 772	1 214	1 193	1 216	19.5
Germany	876	871	868	865	865	-1.2
Greece	63	208	16	32	19	-70.4
Hungary <sup>a, b</sup>	25	26	9	9	19	-23.8
Iceland	3 720	3 703	3 653	3 642	3 641	-2.1
Ireland	461	429	626	381	637	38.3
Italy	1 483	933	357	396	1 481	-0.1
Japan	85	80	72	67	89	4.3
Latvia <sup>a</sup>	499	505	445	520	533	6.9
Liechtenstein						
Lithuania <sup>a</sup>	3	4	1	1	0.3	-89.8
Luxembourg						
Malta						
Monaco						
Netherlands	0.2	0.3	0.3	0.3	0.3	32.0
New Zealand	98	84	101	106	93	-5.1
Norway	145	150	152	152	151	4.1
Poland <sup>a, b</sup>	44	33	32	42	38	-15.0
Portugal	300	334	295	450	1 259	319.1
Romania <sup>a, b</sup>	0.09	3	0.2	1	2	2185.8
Russian Federation <sup>a</sup>	21 190	20 285	22 745	22 804	22 911	8.1
Slovakia <sup>a</sup>	10	25	18	19	21	110.2
Slovenia <sup>a, b</sup>	1	0.5	0.3	1	1	-24.0
Spain	314	292	88	162	164	-47.8
Sweden	472	475	450	438	434	-7.9
Switzerland	30	15	13	16	14	-53.2
Turkey <sup>d</sup>	76	160	23	60	58	-24.3
Ukraine <sup>a</sup>	38	16	38	12	29	-24.1
United Kingdom	16	29	35	33	28	77.9
United States	4 987	11 474	6 995	8 759	8 788	76.2
<i>Number of Parties showing a decrease in emissions by more than 1%:</i>						19
<i>Number of Parties showing a change in emissions within 1%:</i>						2
<i>Number of Parties showing an increase in emissions by more than 1%:</i>						17

<sup>a</sup> EIT Party.

<sup>b</sup> Data for the base year defined by decisions 9/CP.2 and 11/CP.4 (Bulgaria (1988), Hungary (average of 1985–1987), Poland (1988), Romania (1989) and Slovenia (1986)) are used for this Party instead of 1990 data.

<sup>c</sup> Emission estimates of the European Union are as reported for its 28 member States as a group and are reported separately from those of each individual member State.

<sup>d</sup> Decision 26/CP.7 invited Parties to recognize the special circumstances of Turkey, which place it in a situation different from that of other Annex I Parties.



Table 16  
**Anthropogenic N<sub>2</sub>O emissions from land use, land-use change and forestry, 1990, 2000, 2010, 2016 and 2017**

Party	<i>kt CO<sub>2</sub> eq</i>					<i>Change from 1990 to 2017 (%)</i>
	1990	2000	2010	2016	2017	
Australia	4 308	4 301	4 750	3 832	3 925	-8.9
Austria	144	136	135	137	139	-3.6
Belarus <sup>a</sup>	14	19	16	16	15	11.6
Belgium	11	50	102	157	163	1376.0
Bulgaria <sup>a, b</sup>	221	338	501	561	555	150.9
Canada	435	509	339	309	300	-31.2
Croatia <sup>a</sup>	33	102	82	87	130	295.7
Cyprus	0.02	3	0.4	4	0.1	622.0
Czechia <sup>a</sup>	40	34	43	27	30	-23.9
Denmark	27	27	26	32	28	3.7
Estonia <sup>a</sup>	243	246	261	267	267	9.8
European Union <sup>c</sup>	19 230	19 521	19 192	20 875	18 251	-5.1
Finland	2 131	2 149	2 106	2 095	2 104	-1.3
France	3 218	3 171	3 138	3 089	3 095	-3.8
Germany	830	801	809	860	864	4.1
Greece	6	27	17	17	16	143.4
Hungary <sup>a, b</sup>	22	70	56	52	57	157.3
Iceland	52	55	60	61	62	20.0
Ireland	145	203	446	396	458	215.1
Italy	823	679	413	416	489	-40.6
Japan	218	198	181	185	189	-13.4
Latvia <sup>a</sup>	578	591	607	616	618	6.9
Liechtenstein	0.3	0.4	0.4	0.4	0.4	34.0
Lithuania <sup>a</sup>	132	134	165	177	189	43.2
Luxembourg	21	21	17	12	12	-46.0
Malta						
Monaco	0.01	0.01	0.009	0.01	0.01	-8.3
Netherlands	6	61	104	94	96	1581.0
New Zealand	207	236	194	128	107	-48.4
Norway	251	290	320	329	329	30.8
Poland <sup>a, b</sup>	4 222	4 431	4 678	6 495	3 556	-15.8
Portugal	577	493	404	419	568	-1.5
Romania <sup>a, b</sup>	1 241	1 723	1 843	1 843	1 843	48.6
Russian Federation <sup>a</sup>	10 518	15 466	12 052	14 557	14 681	39.6
Slovakia <sup>a</sup>	97	55	30	35	37	-61.9
Slovenia <sup>a, b</sup>	51	49	41	30	28	-45.9
Spain	371	538	328	310	299	-19.4
Sweden	1 296	1 317	1 289	1 229	1 220	-5.9
Switzerland	57	47	46	49	46	-18.0
Turkey <sup>d</sup>	50	116	42	75	74	47.0
Ukraine <sup>a</sup>	193	278	196	127	139	-28.2
United Kingdom	2 252	2 088	1 570	1 434	1 409	-37.4
United States	2 783	8 373	5 598	6 701	6 679	140.0
<i>Number of Parties showing a decrease in emissions by more than 1%:</i>						21
<i>Number of Parties showing a change in emissions within 1%:</i>						0
<i>Number of Parties showing an increase in emissions by more than 1%:</i>						21

<sup>a</sup> EIT Party.

<sup>b</sup> Data for the base year defined by decisions 9/CP.2 and 11/CP.4 (Bulgaria (1988), Hungary (average of 1985–1987), Poland (1988), Romania (1989) and Slovenia (1986)) are used for this Party instead of 1990 data.

<sup>c</sup> Emission estimates of the European Union are as reported for its 28 member States as a group and are reported separately from those of each individual member State.

<sup>d</sup> Decision 26/CP.7 invited Parties to recognize the special circumstances of Turkey, which place it in a situation different from that of other Annex I Parties.

Table 17  
**Indirect CO<sub>2</sub> emissions, 1990, 2000, 2010, 2016 and 2017**

Party	<i>kt CO<sub>2</sub> eq</i>					<i>Change from 1990 to 2017 (%)</i>
	1990	2000	2010	2016	2017	
Australia						
Austria	0.4	0.4	0.4	0.4	0.4	-3.4
Belarus <sup>a</sup>						
Belgium						
Bulgaria <sup>a, b</sup>						
Canada	805	967	634	564	546	-32.2
Croatia <sup>a</sup>						
Cyprus						
Czechia <sup>a</sup>	1 849	1 161	968	752	708	-61.7
Denmark	1 129	824	470	285	281	-75.1
Estonia <sup>a</sup>						
European Union <sup>c</sup>	4 218	2 873	2 180	1 716	1 705	-59.6
Finland	167	109	68	54	53	-68.2
France						
Germany						
Greece						
Hungary <sup>a, b</sup>						
Iceland						
Ireland						
Italy						
Japan	5 474	4 220	2 406	2 103	2 118	-61.3
Latvia <sup>a</sup>	40	25	16	18	19	-52.5
Liechtenstein						
Lithuania <sup>a</sup>						
Luxembourg						
Malta						
Monaco						
Netherlands	917	532	458	451	453	-50.6
New Zealand						
Norway						
Poland <sup>a, b</sup>						
Portugal	115	222	199	156	190	65.3
Romania <sup>a, b</sup>						
Russian Federation <sup>a</sup>						
Slovakia <sup>a</sup>						
Slovenia <sup>a, b</sup>						
Spain						
Sweden						
Switzerland	403	179	109	95	96	-76.3
Turkey <sup>d</sup>						
Ukraine <sup>a</sup>						
United Kingdom						
United States						
<i>Number of Parties showing a decrease in emissions by more than 1%:</i>						<i>10</i>
<i>Number of Parties showing a change in emissions within 1%:</i>						<i>0</i>
<i>Number of Parties showing an increase in emissions by more than 1%:</i>						<i>1</i>

*Note:* In accordance with decision 24/CP.19, Annex I Parties may report indirect CO<sub>2</sub> from the atmospheric oxidation of CH<sub>4</sub>, carbon monoxide and non-methane volatile organic compounds. Eleven Parties voluntarily reported indirect CO<sub>2</sub> emissions in their 2019 inventory submissions.

<sup>a</sup> EIT Party.

<sup>b</sup> Data for the base year defined by decisions 9/CP.2 and 11/CP.4 (Bulgaria (1988), Hungary (average of 1985–1987), Poland (1988), Romania (1989) and Slovenia (1986)) are used for this Party instead of 1990 data.

<sup>c</sup> Emission estimates of the European Union are as reported for its 28 member States as a group and are reported separately from those of each individual member State.

<sup>d</sup> Decision 26/CP.7 invited Parties to recognize the special circumstances of Turkey, which place it in a situation different from that of other Annex I Parties.