United Nations

FCCC/SBI/2025/20

Framework Convention on Climate Change

Distr.: General
28 August 2025

Original: English

Subsidiary Body for Implementation
Sixty-third session
Belém, 10–15 November 2025
Item 3(b) of the provisional agenda
Reporting from and review of Parties included in Annex I to the Convention
Report on national greenhouse gas inventory data

National greenhouse gas inventory data for the period 1990–2023

Report by the secretariat

Summary

In 1990–2023, total aggregate greenhouse gas (GHG) emissions without emissions and removals from land use, land-use change and forestry (LULUCF) for Parties included in Annex I to the Convention (Annex I Parties) decreased by 30.6 per cent, while total GHG emissions and removals with LULUCF decreased by 38.9 per cent. For Annex I Parties with economies in transition, GHG emissions without and with LULUCF decreased by 45.4 and 62.6 per cent respectively. For Annex I Parties that do not have economies in transition, GHG emissions without and with LULUCF decreased by 18.5 and 22.3 per cent respectively. The information in this report is based on the national GHG inventory submissions received as at 16 July 2025.

Abbreviations and acronyms

Annex I Party	Party included in Annex I to the Convention
CH_4	methane
CO_2	carbon dioxide
CO_2 eq	carbon dioxide equivalent
COP	Conference of the Parties
CRT	common reporting table
EIT Party	Party with economy in transition
F-gas	fluorinated gas
GHG	greenhouse gas
IPPU	industrial processes and product use
LULUCF	land use, land-use change and forestry
N_2O	nitrous oxide
NID	national inventory document
NIR	national inventory report
non-EIT Party	Party that does not have an economy in transition

I. Introduction

A. Mandate

1. The COP requested Annex I Parties to submit national inventory data on GHG emissions by sources and removals by sinks by 15 April of each year.[1] COP 20 requested the secretariat to compile and summarize information on the GHG inventory data submitted by Annex I Parties, inter alia, for consideration by the COP and the subsidiary bodies.[2]

2. COP 24 decided that, to fulfil national inventory reporting obligations under the Convention, Parties to the Paris Agreement submitting annual NIRs under the Convention shall use the modalities, procedures and guidelines for NIRs contained in chapter II of the annex to decision 18/CMA.1.[3]

B. Scope

3. This document presents the status of reporting of the 2025 GHG inventories by Annex I Parties as at 16 July 2025 (see chap. II below) and provides a summary of the latest available data on those Parties' GHG emissions and removals for 1990–2023 (see chap. III below). Data are provided for CO_2, CH_4 and N_2O, as well as for F-gases,[4] and, where Parties have elected to report them, indirect CO_2 emissions from the atmospheric oxidation of CH_4, carbon monoxide and non-methane volatile organic compounds. Data are provided on total[5] aggregate[6] GHG emissions without and with net GHG emissions and removals from LULUCF.

C. Possible action by the Subsidiary Body for Implementation

4. The Subsidiary Body for Implementation may wish to take note of the information herein and seek guidance from the COP, as appropriate.

II. Status of reporting

5. According to the modalities, procedures and guidelines for NIRs, the NIR consists of an NID and the CRTs, including a time series of data for 1990 up until no more than two years prior to the submission of the NIR.

6. As at 16 July 2025, 42 NIDs and CRTs had been received.[7] New Zealand and Türkiye resubmitted their CRTs. The dates of initial submissions are shown in table 1.

[1] Decision 3/CP.1, para. 2(b).
[2] Decision 13/CP.20, paras. 8 and 10.
[3] Decision 1/CP.24, para. 42.
[4] Hydrofluorocarbons, perfluorocarbons, sulfur hexafluoride, an unspecified mix of hydrofluorocarbons and perfluorocarbons, and nitrogen trifluoride.
[5] The term "total" implies that emissions from the CRT sectors are summed; the inclusion of emissions from LULUCF in the sum is indicated separately, as appropriate; unless stated otherwise, totals do not include indirect CO_2 emissions.
[6] The term "aggregate" implies that GHG emissions and removals are calculated as a weighted sum of CO_2, CH_4, N_2O and F-gases using the global warming potential values agreed under the Convention.
[7] Available at https://unfccc.int/ghg-inventories-annex-i-parties/2025.

Table 1
Greenhouse gas inventory submissions from Annex I Parties as at 16 July 2025

Party	*NID submission date*[a]	*CRT submission date*[a]
Australia	*30 May 2025*	*30 May 2025*
Austria	15 April 2025	15 April 2025
Belarus	*30 April 2025*	*30 April 2025*
Belgium	14 April 2025	14 April 2025
Bulgaria	15 April 2025	15 April 2025
Canada	21 March 2025	21 March 2025
Croatia	14 April 2025	14 April 2025
Cyprus	*7 May 2025*	*7 May 2025*
Czechia	15 April 2025	15 April 2025
Denmark	15 April 2025	15 April 2025
Estonia	15 April 2025	15 April 2025
European Union	15 April 2025	15 April 2025
Finland	15 April 2025	15 April 2025
France	15 April 2025	15 April 2025
Germany	15 April 2025	15 April 2025
Greece	10 April 2025	10 April 2025
Hungary	*10 June 2025*	*10 June 2025*
Iceland	14 April 2025	14 April 2025
Ireland	15 April 2025	15 April 2025
Italy	4 April 2025	4 April 2025
Japan	*25 April 2025*	*25 April 2025*
Latvia	11 April 2025	11 April 2025
Liechtenstein	11 April 2025	11 April 2025
Lithuania	15 April 2025	15 April 2025
Luxembourg	15 April 2025	15 April 2025
Malta	27 March 2025	27 March 2025
Monaco	14 April 2025	14 April 2025
Netherlands	15 April 2025	15 April 2025
New Zealand	15 April 2025	15 April 2025
Norway	14 March 2025	14 March 2025
Poland	14 April 2025	14 April 2025
Portugal	14 April 2025	14 April 2025
Romania	14 April 2025	14 April 2025
Russian Federation	*19 April 2025*	*19 April 2025*
Slovakia	14 April 2025	14 April 2025
Slovenia	15 April 2025	14 April 2025
Spain	13 March 2025	13 March 2025
Sweden	15 April 2025	15 April 2025
Switzerland	10 April 2025	10 April 2025
Türkiye	15 April 2025	15 April 2025
Ukraine	28 March 2025	2 April 2025
United Kingdom	15 April 2025	15 April 2025
United States	–	–

[a] Dates after 15 April 2025 are shown in italics.

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

A. Total aggregate greenhouse gas emissions

7. From 1990 to 2023, total aggregate GHG emissions without LULUCF for all Annex I Parties decreased by 30.6 per cent, while emissions with LULUCF decreased by 38.9 per cent (see figures 1–2). Between 2022 and 2023, GHG emissions decreased by 3.3 per cent without LULUCF and by 4.7 per cent with LULUCF.

8. For Annex I EIT Parties, GHG emissions decreased by 45.4 per cent without LULUCF and by 62.6 per cent with LULUCF from 1990 to 2023. Between 2022 and 2023, GHG emissions decreased by 0.7 per cent without LULUCF and by 0.8 per cent with LULUCF.

9. For Annex I non-EIT Parties, GHG emissions decreased by 18.5 per cent without LULUCF and by 22.3 per cent with LULUCF from 1990 to 2023. Between 2022 and 2023, GHG emissions without LULUCF decreased by 4.6 per cent, while GHG emissions with LULUCF decreased by 6.0 per cent.

Figure 1
Greenhouse gas emissions of Annex I Parties, 1990–2023

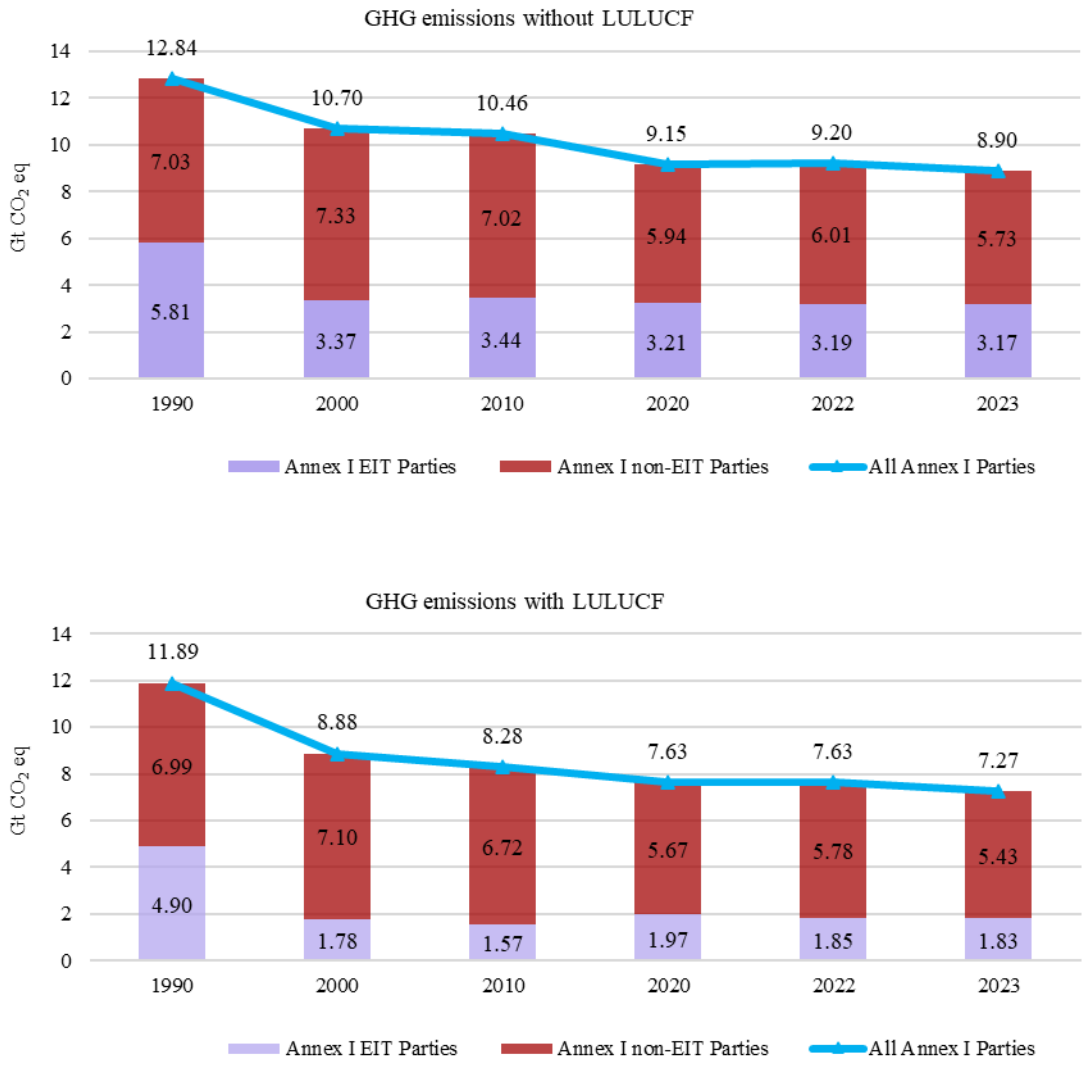
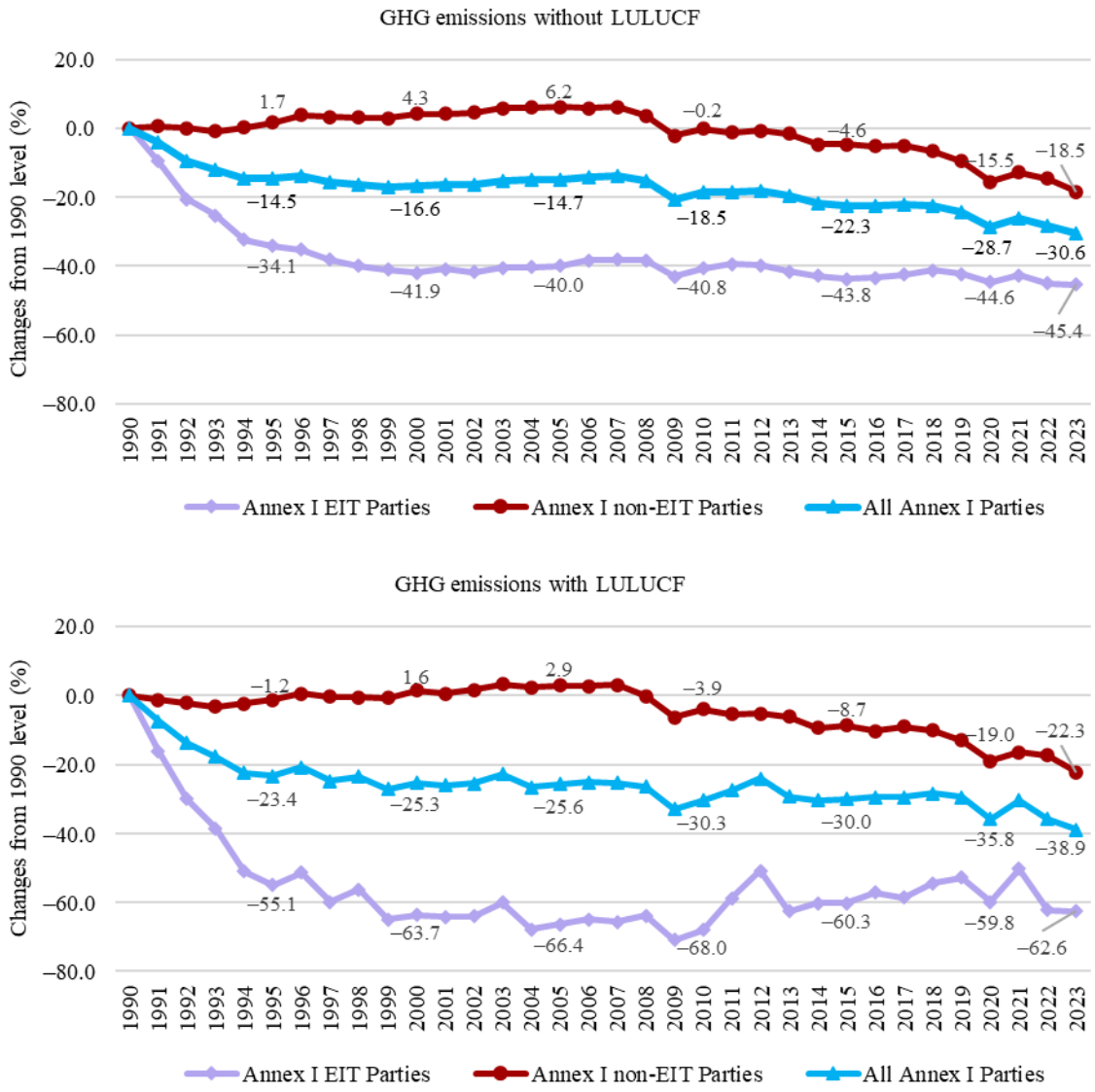


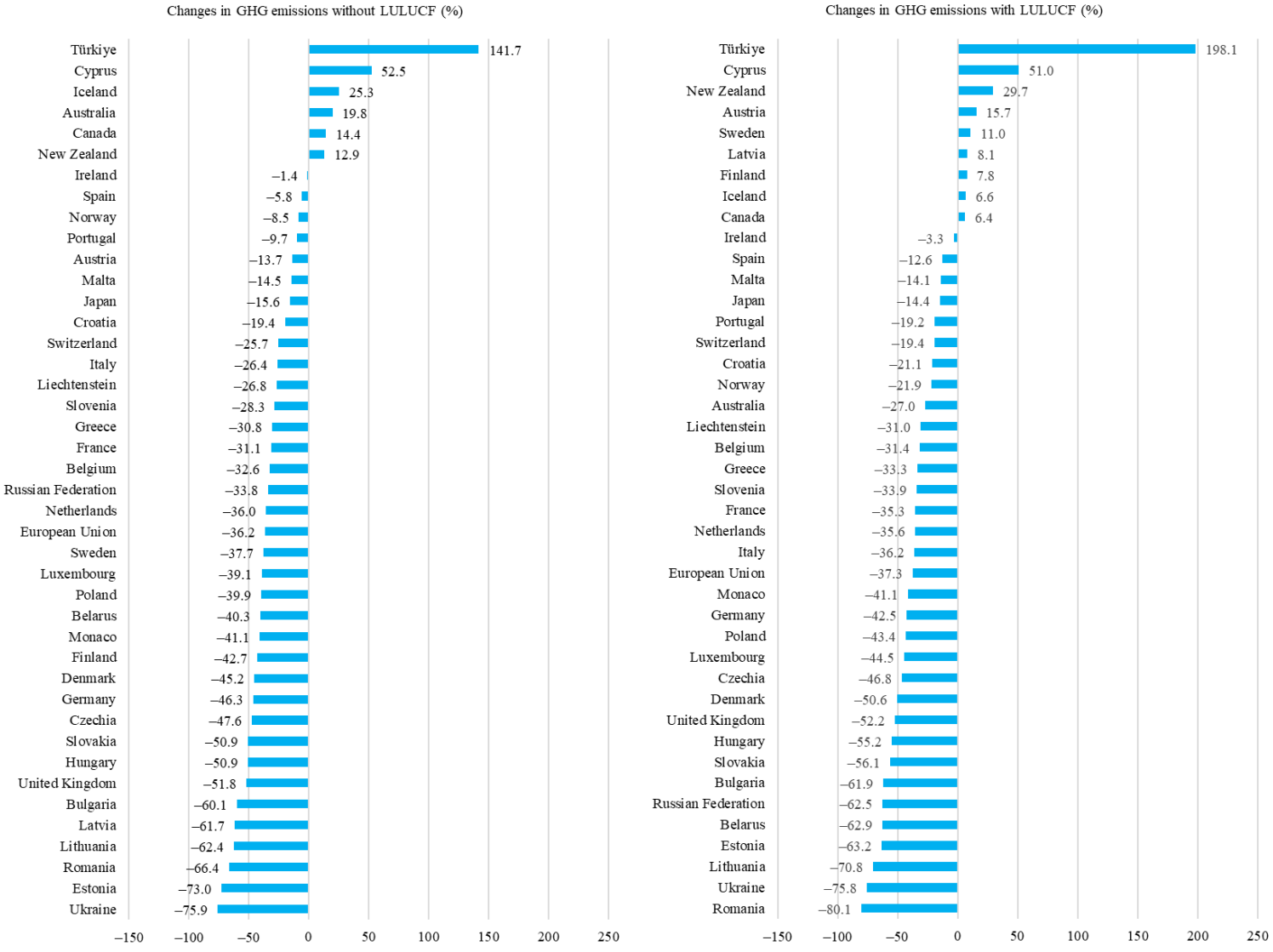
Figure 2
Percentage changes from 1990 level in greenhouse gas emissions of Annex I Parties, 1990–2023



10. The changes in total aggregate GHG emissions in 1990–2023 varied among Parties (see figure 3). Ukraine had the largest decrease in emissions without LULUCF (by 75.9 per cent) and Romania had the largest decrease with LULUCF (by 80.1 per cent). Türkiye had the largest increase in emissions by 141.7 and 198.1 per cent without and with LULUCF respectively.

Figure 3

Changes in total aggregate emissions of individual Annex I Parties, 1990–2023

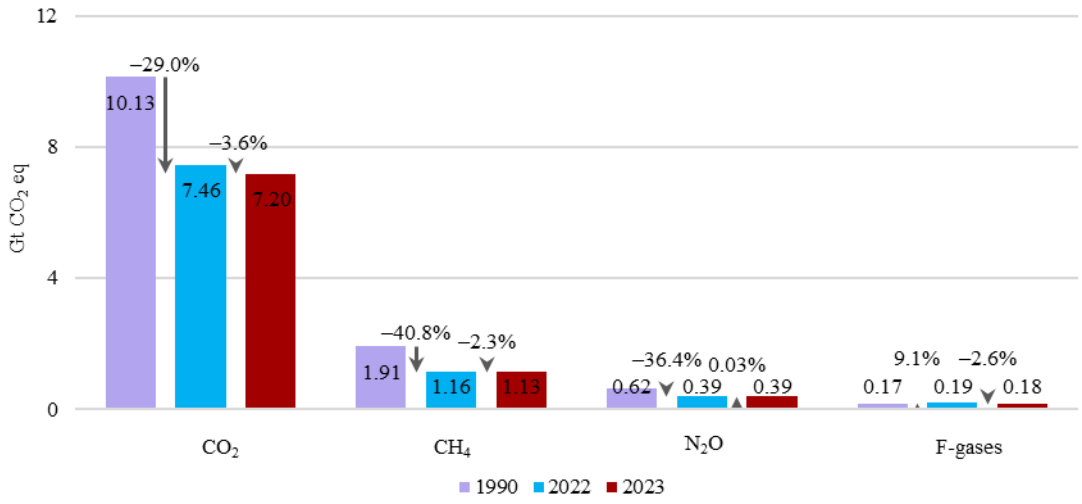


B. Greenhouse gas emissions by gas

11. From 1990 to 2023, CO_2 accounted for the largest share of total emissions, contributing 79.0 per cent in 1990 and 80.8 per cent in 2023, followed by CH_4 (14.9 per cent in 1990 and 12.7 per cent in 2023), N_2O (4.8 per cent in 1990 and 4.4 per cent in 2023) and F-gases (1.3 per cent in 1990 and 2.1 per cent in 2023).

12. Between 1990 and 2023, emissions of CO_2, CH_4 and N_2O decreased, while emissions of F-gases increased (see figure 4). Between 2022 and 2023, emissions of CO_2, CH_4 and F-gases decreased, while N_2O emissions increased slightly.

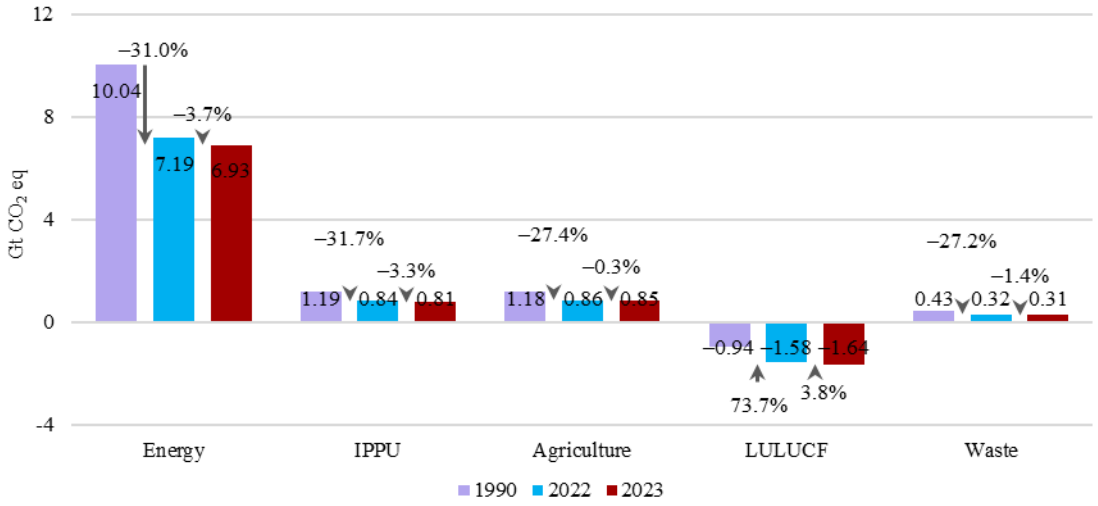
Figure 4
Greenhouse gas emissions without land use, land-use change and forestry of Annex I Parties by gas, 1990, 2022 and 2023



C. Greenhouse gas emissions by sector

13. Emissions from all sectors decreased between 1990 and 2023 (see figure 5), with the largest relative decrease in the IPPU sector. Over the same period, net GHG removals from LULUCF increased. A similar trend is observed between 2022 and 2023 for all sectors.

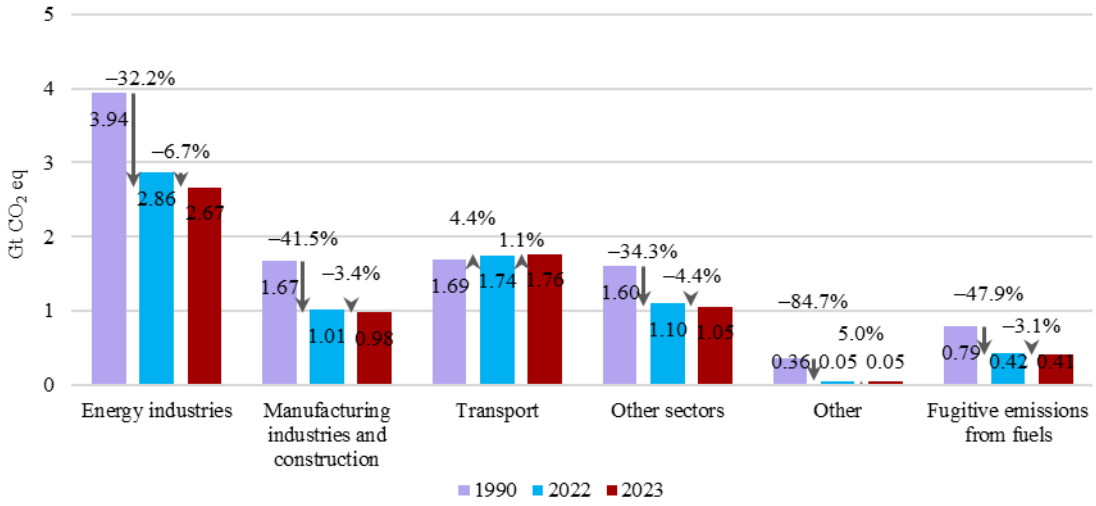
Figure 5
Greenhouse gas emissions and removals of Annex I Parties by sector, 1990, 2022 and 2023



Note: The sector other is not included in this figure because its contribution to total GHG emissions was very small; emissions decreased by 25.3 per cent between 1990 and 2023.

14. From 1990 to 2023, GHG emissions decreased in all subsectors of the energy sector except transport (see figure 6). The largest relative emission reduction occurred in the subsector other. Between 2022 and 2023, emissions from the energy subsectors decreased except for transport and other.

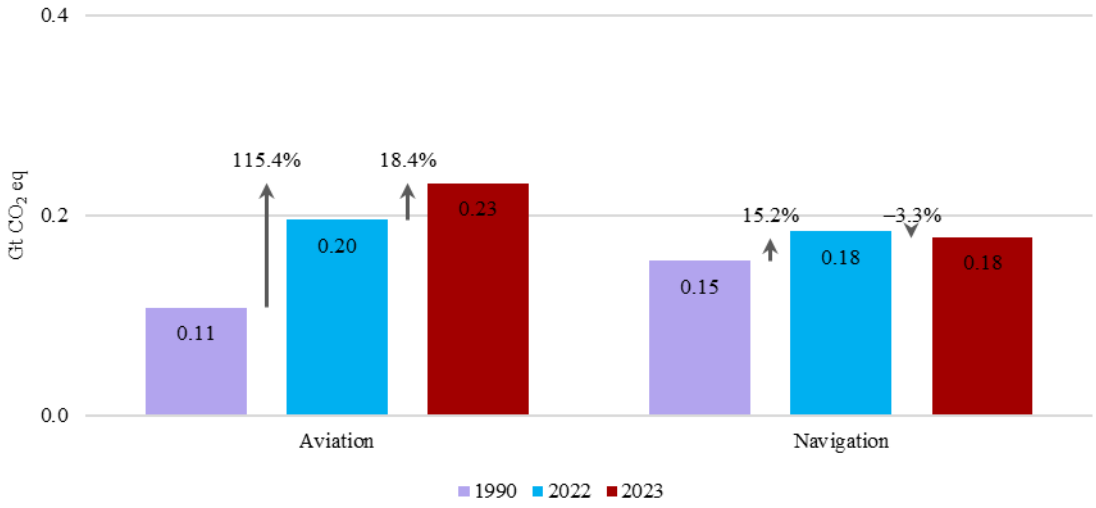
Figure 6
Greenhouse gas emissions of Annex I Parties in the energy sector, 1990, 2022 and 2023



Note: The CO_2 transport and storage subsector is not included in this figure because its contribution to total GHG emissions was very small; emissions decreased by 47.8 per cent between 1996 and 2023.

15. From 1990 to 2023, emissions from international bunkers for aviation and navigation increased. Between 2022 and 2023, emissions from aviation increased, while emissions from navigation decreased (see figure 7).

Figure 7
Greenhouse gas emissions from international bunker fuels for Annex I Parties, 1990, 2022 and 2023



D. Emission data for individual Annex I Parties

16. Tables 2–14 present detailed GHG inventory data for the individual Annex I Parties. The cells with an en dash (–) in the tables denote that data were not available or notation keys were used to report emission data. Negative values denote removals; positive values denote emissions.

Table 2
Total aggregate anthropogenic emissions of CO_2, CH_4, N_2O and fluorinated gases without emissions and removals from land use, land-use change and forestry

	kt CO_2 eq					*Change 1990–2023 (%)*
Party	*1990*	*2010*	*2020*	*2022*	*2023*	
Australia	440 157	548 237	538 348	523 623	527 150	19.8
Austria	79 621	85 442	74 679	73 515	68 696	–13.7
Belarus[a]	146 017	92 326	90 096	88 353	87 150	–40.3
Belgium	145 640	133 282	106 968	102 977	98 221	–32.6
Bulgaria[a, b]	113 610	59 352	47 925	58 396	45 365	–60.1
Canada	606 392	728 027	682 283	699 900	693 915	14.4
Croatia[a]	31 553	28 273	23 898	24 523	25 419	–19.4
Cyprus	5 573	9 425	8 061	8 337	8 497	52.5
Czechia[a]	194 607	138 945	111 496	114 519	102 056	–47.6
Denmark	71 226	65 076	43 161	42 494	39 010	–45.2
Estonia[a]	40 278	21 100	11 337	14 149	10 862	–73.0
European Union[c]	4 864 929	4 171 785	3 292 956	3 371 886	3 102 183	–36.2
Finland	71 648	75 638	47 703	45 646	41 055	–42.7
France	544 915	511 748	395 246	402 589	375 597	–31.1
Germany	1 252 397	930 250	732 993	748 793	672 020	–46.3
Greece	103 984	119 234	75 874	77 770	71 935	–30.8
Hungary[a, b]	110 687	66 806	62 939	59 728	54 313	–50.9
Iceland	3 707	4 976	4 605	4 782	4 646	25.3
Ireland	55 735	61 797	57 619	58 960	54 934	–1.4
Italy	521 390	521 896	379 074	412 121	383 887	–26.4
Japan	1 266 977	1 290 980	1 123 430	1 114 042	1 069 133	–15.6
Latvia[a]	26 027	11 872	10 494	10 106	9 969	–61.7
Liechtenstein	228	228	180	165	167	–26.8
Lithuania[a]	47 486	20 233	19 572	18 394	17 850	–62.4
Luxembourg	12 756	12 194	9 063	8 214	7 769	–39.1
Malta	2 626	2 965	2 086	2 260	2 246	–14.5
Monaco	102	86	69	65	60	–41.1
Netherlands	222 205	214 397	164 559	153 095	142 204	–36.0
New Zealand	67 679	81 331	81 376	77 983	76 416	12.9
Norway	50 884	54 683	49 372	48 863	46 567	–8.5
Poland[a, b]	579 447	405 410	370 731	380 458	348 060	–39.9
Portugal	58 822	68 734	57 356	56 276	53 124	–9.7
Romania[a, b]	309 564	124 813	111 521	109 667	103 862	–66.4
Russian Federation[a, d]	3 147 532	1 987 609	1 975 966	2 025 066	2 082 885	–33.8
Slovakia[a]	73 426	45 427	36 912	36 841	36 074	–50.9
Slovenia[a, b]	20 657	19 726	15 903	15 558	14 804	–28.3
Spain	286 655	353 628	269 803	292 297	269 968	–5.8
Sweden	71 203	64 123	45 982	44 202	44 386	–37.7
Switzerland	54 852	55 375	44 040	41 800	40 753	–25.7
Türkiye[e]	228 433	406 421	531 914	559 984	552 191	141.7
Ukraine[a]	964 370	417 202	325 221	239 184	232 855	–75.9
United Kingdom	804 151	619 182	411 427	408 361	387 953	–51.8
United States	–	–	–	–	–	–
Number of Parties showing a decrease in emissions of more than 1%:						*36*
Number of Parties showing a change in emissions within 1%:						*0*
Number of Parties showing an increase in emissions of more than 1%:						*6*

[a] EIT Party.

[b] 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.

[c] Emission estimates of the European Union are as reported for its 27 member States as a group and are reported separately from those of each individual member State.

[d] Information provided by the Russian Federation. The General Assembly addressed the status of the Autonomous Republic of Crimea and the city of Sevastopol in resolution 68/262 of 27 March 2014.

[e] Decision 26/CP.7 invited Parties to recognize the special circumstances of Türkiye, which place it in a situation different from that of other Annex I Parties.

Table 3
Total aggregate anthropogenic emissions of CO_2, CH_4, N_2O and fluorinated gases with emissions and removals from land use, land-use change and forestry

	kt CO_2 eq					*Change 1990–2023 (%)*
Party	*1990*	*2010*	*2020*	*2022*	*2023*	
Australia	620 859	616 619	477 710	440 621	453 449	–27.0
Austria	65 865	73 708	73 729	73 309	76 226	15.7
Belarus[a]	123 733	51 170	59 608	53 116	45 859	–62.9
Belgium	142 801	132 804	106 569	102 460	97 915	–31.4
Bulgaria[a, b]	96 472	47 843	38 656	49 242	36 764	–61.9
Canada	656 240	768 362	707 289	750 697	698 084	6.4
Croatia[a]	25 203	21 370	18 241	19 657	19 893	–21.1
Cyprus	5 420	9 160	7 763	8 037	8 186	51.0
Czechia[a]	185 052	130 524	118 956	115 966	98 487	–46.8
Denmark	77 925	67 367	44 388	42 076	38 509	–50.6
Estonia[a]	35 308	16 314	12 478	14 347	12 993	–63.2
European Union[c]	4 627 606	3 825 989	3 099 132	3 188 600	2 903 762	–37.3
Finland	49 212	54 599	49 515	57 713	53 054	7.8
France	522 551	471 960	357 503	368 619	338 216	–35.3
Germany	1 288 425	935 555	809 649	824 396	740 673	–42.5
Greece	101 705	115 823	70 727	72 589	67 832	–33.3
Hungary[a, b]	108 327	62 170	55 863	52 955	48 502	–55.2
Iceland	11 850	13 064	12 605	12 767	12 631	6.6
Ireland	60 834	66 920	62 325	62 616	58 829	–3.3
Italy	517 757	482 209	339 282	372 887	330 298	–36.2
Japan	1 190 330	1 212 481	1 064 970	1 062 090	1 018 932	–14.4
Latvia[a]	13 505	9 798	11 024	15 808	14 599	8.1
Liechtenstein	232	245	174	158	160	–31.0
Lithuania[a]	43 151	9 526	14 400	12 570	12 595	–70.8
Luxembourg	12 771	11 983	8 519	7 469	7 093	–44.5
Malta	2 617	2 979	2 095	2 260	2 247	–14.1
Monaco	101	86	69	65	60	–41.1
Netherlands	226 625	218 983	167 880	156 566	146 008	–35.6
New Zealand	43 345	52 710	60 432	58 610	56 219	29.7
Norway	40 288	29 068	33 867	40 329	31 463	–21.9
Poland[a, b]	557 202	367 358	346 673	344 008	315 404	–43.4
Portugal	63 235	65 599	53 837	55 851	51 091	–19.2
Romania[a, b]	288 440	89 751	62 411	63 981	57 438	–80.1
Russian Federation[a]	2 427 221	310 358	878 751	843 728	911 126	–62.5
Slovakia[a]	64 533	40 723	29 732	29 614	28 298	–56.1
Slovenia[a, b]	15 900	12 570	11 567	11 339	10 513	–33.9
Spain	250 481	306 071	218 719	241 676	218 935	–12.6
Sweden	11 863	2 322	6 631	10 588	13 162	11.0
Switzerland	52 185	53 164	42 817	40 371	42 053	–19.4
Türkiye[d]	162 004	334 299	474 168	503 730	482 956	198.1
Ukraine[a]	916 473	396 248	309 740	223 531	221 693	–75.8
United Kingdom	814 816	620 394	411 846	408 933	389 091	–52.2
United States	–	–	–	–	–	–
Number of Parties showing a decrease in emissions of more than 1%:						*33*
Number of Parties showing a change in emissions within 1%:						*0*
Number of Parties showing an increase in emissions of more than 1%:						*9*

[a] EIT Party.

[b] 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.

[c] Emission estimates of the European Union are as reported for its 27 member States as a group and are reported separately from those of each individual member State.

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

Table 4
Total anthropogenic CO_2 emissions without emissions and removals from land use, land-use change and forestry

	kt CO_2 eq					*Change 1990–2023*
Party	*1990*	*2010*	*2020*	*2022*	*2023*	*(%)*
Australia	278 061	405 026	398 547	384 078	384 316	38.2
Austria	62 191	72 000	62 180	61 454	56 909	–8.5
Belarus[a]	108 459	62 515	59 123	57 121	55 736	–48.6
Belgium	120 335	114 563	91 255	88 915	84 703	–29.6
Bulgaria[a, b]	89 542	47 816	36 571	46 932	34 501	–61.5
Canada	458 018	554 307	524 208	547 658	545 479	19.1
Croatia[a]	22 885	20 978	16 870	17 585	18 468	–19.3
Cyprus	4 648	8 072	6 903	7 071	7 188	54.7
Czechia[a]	164 252	117 464	91 661	95 040	83 232	–49.3
Denmark	53 369	49 117	28 224	28 296	25 790	–51.7
Estonia[a]	36 906	18 965	9 198	11 966	8 744	–76.3
European Union[c]	3 873 392	3 433 443	2 635 477	2 743 627	2 489 435	–35.7
Finland	56 921	64 092	37 720	36 337	31 798	–44.1
France	398 152	386 269	290 016	304 017	278 907	–29.9
Germany	1 054 796	826 705	647 177	667 843	593 766	–43.7
Greece	83 437	97 354	55 577	57 609	51 988	–37.7
Hungary[a, b]	85 974	51 993	47 105	45 267	40 344	–53.1
Iceland	2 222	3 627	3 339	3 598	3 508	57.9
Ireland	32 945	41 791	35 053	36 676	33 568	1.9
Italy	438 208	435 672	302 600	340 115	312 291	–28.7
Japan	1 154 853	1 211 090	1 037 285	1 029 645	986 910	–14.5
Latvia[a]	19 662	8 555	6 999	6 608	6 590	–66.5
Liechtenstein	206	196	147	133	135	–34.3
Lithuania[a]	35 738	13 802	13 500	12 895	12 507	–65.0
Luxembourg	11 809	11 191	8 069	7 274	6 841	–42.1
Malta	2 427	2 619	1 601	1 774	1 768	–27.2
Monaco	101	79	64	60	51	–49.4
Netherlands	163 033	182 479	136 974	127 503	117 016	–28.2
New Zealand	25 490	34 787	34 109	31 966	31 560	23.8
Norway	34 546	45 489	41 113	40 707	38 757	12.2
Poland[a, b]	471 008	334 028	302 102	314 892	283 243	–39.9
Portugal	45 311	52 890	41 738	40 722	37 622	–17.0
Romania[a, b]	208 987	84 488	73 946	73 186	67 866	–67.5
Russian Federation[a]	2 536 284	1 633 147	1 631 902	1 675 461	1 733 135	–31.7
Slovakia[a]	61 529	38 464	31 176	31 589	30 766	–50.0
Slovenia[a, b]	16 771	16 466	12 873	12 728	12 012	–28.4
Spain	229 383	282 585	211 765	234 223	215 461	–6.1
Sweden	57 417	53 029	36 622	35 108	35 543	–38.1
Switzerland	44 149	45 034	34 343	32 951	31 977	–27.6
Türkiye[d]	154 572	318 706	416 109	443 386	442 867	186.5
Ukraine[a]	706 526	294 366	207 101	143 040	139 325	–80.3
United Kingdom	603 552	514 801	329 995	330 572	312 091	–48.3
United States	–	–	–	–	–	–
Number of Parties showing a decrease in emissions of more than 1%:						*34*
Number of Parties showing a change in emissions within 1%:						*0*
Number of Parties showing an increase in emissions of more than 1%:						*8*

[a] EIT Party.

[b] 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.

[c] Emission estimates of the European Union are as reported for its 27 member States as a group and are reported separately from those of each individual member State.

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

Table 5
Total anthropogenic CO_2 emissions with emissions and removals from land use, land-use change and forestry

	kt CO_2 eq					*Change 1990–2023 (%)*
Party	*1990*	*2010*	*2020*	*2022*	*2023*	
Australia	431 112	444 316	318 454	279 746	288 492	–33.1
Austria	48 218	60 043	61 018	61 039	64 232	33.2
Belarus[a]	86 152	21 338	28 579	21 843	14 427	–83.3
Belgium	117 494	114 034	90 800	88 342	84 340	–28.2
Bulgaria[a, b]	72 331	36 221	27 183	37 648	25 760	–64.4
Canada	506 669	593 417	548 202	597 564	548 754	8.3
Croatia[a]	16 489	13 946	10 993	12 512	12 797	–22.4
Cyprus	4 495	7 805	6 603	6 770	6 876	53.0
Czechia[a]	154 658	109 020	99 103	96 453	79 654	–48.5
Denmark	59 606	50 980	29 030	27 447	24 851	–58.3
Estonia[a]	31 621	13 847	9 993	11 817	10 528	–66.7
European Union[c]	3 606 742	3 061 603	2 416 768	2 534 130	2 262 959	–37.3
Finland	31 078	39 905	36 735	45 624	40 979	31.9
France	373 086	344 260	250 802	268 418	240 054	–35.7
Germany	1 082 655	823 688	716 271	736 004	653 661	–39.6
Greece	81 081	93 909	50 394	52 349	47 311	–41.7
Hungary[a, b]	83 566	47 313	39 980	38 349	34 484	–58.7
Iceland	8 619	10 039	9 696	9 947	9 859	14.4
Ireland	33 757	42 606	35 953	36 445	33 503	–0.8
Italy	432 937	395 390	262 124	299 836	257 900	–40.4
Japan	1 077 219	1 131 982	978 344	977 204	936 202	–13.1
Latvia[a]	6 131	5 422	6 121	10 851	9 817	60.1
Liechtenstein	202	208	136	121	123	–39.0
Lithuania[a]	30 998	2 645	7 867	6 607	6 778	–78.1
Luxembourg	11 811	10 970	7 522	6 527	6 163	–47.8
Malta	2 417	2 633	1 609	1 774	1 768	–26.8
Monaco	97	75	60	56	51	–47.4
Netherlands	166 758	186 342	139 607	130 284	120 131	–28.0
New Zealand	786	5 751	12 808	12 304	11 049	1 306.0
Norway	23 539	19 427	25 149	31 719	23 196	–1.5
Poland[a, b]	446 682	294 925	275 993	276 388	247 416	–44.6
Portugal	48 883	49 290	37 948	39 954	35 380	–27.6
Romania[a, b]	187 677	49 177	24 736	27 350	21 307	–88.6
Russian Federation[a]	1 797 969	–67 128	507 336	475 507	540 026	–70.0
Slovakia[a]	52 505	33 705	23 932	24 272	22 948	–56.3
Slovenia[a, b]	11 949	9 262	8 501	8 462	7 689	–35.7
Spain	192 387	234 620	160 291	182 781	163 983	–14.8
Sweden	–3 660	–10 357	–4 340	–173	2 649	172.4
Switzerland	41 399	42 767	33 065	31 458	33 217	–19.8
Türkiye[d]	88 001	246 525	358 145	386 991	373 488	324.4
Ukraine[a]	658 415	273 195	190 966	127 171	127 991	–80.6
United Kingdom	606 725	508 984	323 414	324 112	306 156	–49.5
United States	–	–	–	–	–	–
Number of Parties showing a decrease in emissions of more than 1%:						*32*
Number of Parties showing a change in emissions within 1%:						*1*
Number of Parties showing an increase in emissions of more than 1%:						*9*

[a] EIT Party.

[b] 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.

[c] Emission estimates of the European Union are as reported for its 27 member States as a group and are reported separately from those of each individual member State.

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

Table 6
Total anthropogenic CH_4 emissions without emissions and removals from land use, land-use change and forestry

	kt CO_2 eq					*Change 1990–2023 (%)*
Party	*1990*	*2010*	*2020*	*2022*	*2023*	
Australia	144 014	120 777	114 266	112 130	114 775	–20.3
Austria	11 763	8 349	7 082	7 005	6 892	–41.4
Belarus[a]	23 132	18 650	19 481	19 833	20 191	–12.7
Belgium	13 112	9 239	7 994	7 681	7 588	–42.1
Bulgaria[a, b]	15 189	7 546	6 384	6 545	5 987	–60.6
Canada	106 891	139 457	118 066	112 363	109 058	2.0
Croatia[a]	5 005	4 562	3 993	3 798	3 686	–26.4
Cyprus	776	974	1 063	1 076	1 081	39.2
Czechia[a]	23 922	14 029	11 673	11 657	11 279	–52.9
Denmark	9 927	9 931	9 354	9 153	8 552	–13.9
Estonia[a]	2 155	1 288	1 113	1 107	1 086	–49.6
European Union[c]	652 718	458 693	406 125	394 993	386 117	–40.8
Finland	8 729	5 935	4 890	4 637	4 482	–48.6
France	81 876	74 889	64 195	61 561	60 746	–25.8
Germany	133 424	61 004	47 896	45 705	44 934	–66.3
Greece	12 527	12 505	11 380	11 769	11 650	–7.0
Hungary[a, b]	14 484	9 827	9 190	8 674	8 334	–42.5
Iceland	664	710	628	609	587	–11.5
Ireland	16 534	13 722	16 314	16 275	15 855	–4.1
Italy	55 017	52 932	47 419	45 716	45 161	–17.9
Japan	49 901	34 776	30 361	29 782	29 392	–41.1
Latvia[a]	4 067	2 003	1 899	1 892	1 816	–55.4
Liechtenstein	21	21	22	21	21	2.0
Lithuania[a]	7 546	3 908	3 164	3 027	2 918	–61.3
Luxembourg	682	684	670	651	637	–6.6
Malta	140	166	225	227	224	60.4
Monaco	6	4	11	10	3	–51.7
Netherlands	35 897	21 711	18 940	18 012	17 850	–50.3
New Zealand	36 271	38 761	38 426	37 501	36 752	1.3
Norway	6 843	5 856	5 011	4 972	4 796	–29.9
Poland[a, b]	78 356	47 052	43 218	40 939	40 089	–48.8
Portugal	9 979	10 807	10 156	10 243	10 058	0.8
Romania[a, b]	74 067	29 695	26 068	25 258	24 716	–66.6
Russian Federation[a]	457 717	288 706	249 239	248 833	245 754	–46.3
Slovakia[a]	8 274	4 125	3 599	3 484	3 409	–58.8
Slovenia[a, b]	2 929	2 361	2 045	1 868	1 843	–37.1
Spain	41 164	43 403	41 389	42 322	40 600	–1.4
Sweden	8 473	6 045	4 811	4 710	4 644	–45.2
Switzerland	6 220	5 418	4 942	4 907	4 867	–21.7
Türkiye[d]	51 257	60 064	73 498	71 910	64 270	25.4
Ukraine[a]	209 264	97 628	83 289	66 893	62 756	–70.0
United Kingdom	143 469	73 478	54 711	52 770	51 555	–64.1
United States	–	–	–	–	–	–
Number of Parties showing a decrease in emissions of more than 1%:						*35*
Number of Parties showing a change in emissions within 1%:						*1*
Number of Parties showing an increase in emissions of more than 1%:						*6*

[a] EIT Party.
[b] 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.
[c] Emission estimates of the European Union are as reported for its 27 member States as a group and are reported separately from those of each individual member State.
[d] Decision 26/CP.7 invited Parties to recognize the special circumstances of Türkiye, which place it in a situation different from that of other Annex I Parties.

Table 7
Total anthropogenic CH_4 emissions with emissions and removals from land use, land-use change and forestry

	kt CO_2 eq					*Change*
Party	*1990*	*2010*	*2020*	*2022*	*2023*	*1990–2023 (%)*
Australia	167 190	144 477	130 213	129 536	132 764	–20.6
Austria	11 801	8 386	7 119	7 042	6 930	–41.3
Belarus[a]	23 141	18 656	19 508	19 842	20 200	–12.7
Belgium	13 112	9 239	7 994	7 681	7 588	–42.1
Bulgaria[a, b]	15 190	7 563	6 398	6 566	6 012	–60.4
Canada	107 742	140 323	118 768	112 980	109 678	1.8
Croatia[a]	5 006	4 564	4 030	3 835	3 687	–26.3
Cyprus	776	975	632	682	704	–9.3
Czechia[a]	23 941	14 040	11 683	11 677	11 283	–52.9
Denmark	10 316	10 317	9 736	9 542	8 948	–13.3
Estonia[a]	2 230	1 365	1 191	1 185	1 164	–47.8
European Union[c]	670 762	474 934	420 431	410 135	402 331	–40.0
Finland	10 623	7 203	5 843	5 565	5 409	–49.1
France	82 512	75 684	64 869	62 341	61 411	–25.6
Germany	140 783	68 418	54 427	52 130	52 683	–62.6
Greece	12 597	12 524	11 401	11 831	12 184	–3.3
Hungary[a, b]	14 507	9 837	9 202	8 747	8 345	–42.5
Iceland	2 407	2 384	2 268	2 242	2 217	–7.9
Ireland	20 626	17 700	19 848	19 899	19 547	–5.2
Italy	55 744	53 126	47 594	46 091	45 355	–18.6
Japan	50 018	34 864	30 440	29 862	29 479	–41.1
Latvia[a]	4 590	2 539	2 744	2 781	2 705	–41.1
Liechtenstein	21	21	22	21	21	2.0
Lithuania[a]	7 551	3 912	3 167	3 030	2 921	–61.3
Luxembourg	682	684	670	651	637	–6.6
Malta	140	166	225	227	224	60.4
Monaco	2	1	0.8	0.8	0.8	–69.4
Netherlands	36 474	22 325	19 535	18 603	18 439	–49.4
New Zealand	36 349	38 864	38 532	37 541	36 797	1.2
Norway	7 038	6 066	5 227	5 189	5 013	–28.8
Poland[a, b]	78 412	47 066	43 277	40 961	40 099	–48.9
Portugal	10 553	11 016	10 235	10 391	10 105	–4.2
Romania[a, b]	74 067	29 696	26 088	25 306	24 731	–66.6
Russian Federation[a]	469 168	303 127	265 781	259 210	257 085	–45.2
Slovakia[a]	8 287	4 147	3 627	3 529	3 424	–58.7
Slovenia[a, b]	2 930	2 361	2 045	1 877	1 843	–37.1
Spain	41 515	43 501	41 520	42 717	40 773	–1.8
Sweden	9 089	6 580	5 332	5 246	5 179	–43.0
Switzerland	6 256	5 432	4 955	4 925	4 884	–21.9
Türkiye[d]	51 351	60 090	73 620	71 983	64 340	25.3
Ukraine[a]	209 306	97 670	83 620	66 937	62 767	–70.0
United Kingdom	149 041	79 085	60 402	58 492	57 308	–61.5
United States	–	–	–	–	–	–
Number of Parties showing a decrease in emissions of more than 1%:						*37*
Number of Parties showing a change in emissions within 1%:						*0*
Number of Parties showing an increase in emissions of more than 1%:						*5*

[a] EIT Party.

[b] 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.

[c] Emission estimates of the European Union are as reported for its 27 member States as a group and are reported separately from those of each individual member State.

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

Table 8
Total anthropogenic N_2O emissions without emissions and removals from land use, land-use change and forestry

	kt CO_2 eq					*Change 1990–2023 (%)*
Party	*1990*	*2010*	*2020*	*2022*	*2023*	
Australia	12 518	15 301	14 226	15 968	16 157	29.1
Austria	4 117	3 217	3 223	3 148	3 077	–25.3
Belarus[a]	14 427	11 161	11 493	11 400	11 223	–22.2
Belgium	8 492	6 262	4 313	3 953	3 873	–54.4
Bulgaria[a, b]	8 876	3 556	4 182	4 219	4 226	–52.4
Canada	30 553	24 823	27 798	28 292	28 018	–8.3
Croatia[a]	2 535	2 159	1 453	1 318	1 326	–47.7
Cyprus	146	169	171	171	172	17.5
Czechia[a]	6 347	4 880	4 345	4 071	3 832	–39.6
Denmark	7 892	5 175	5 218	4 771	4 394	–44.3
Estonia[a]	1 217	675	843	875	838	–31.1
European Union[c]	289 147	186 283	177 445	166 414	164 744	–43.0
Finland	5 943	4 266	4 161	3 880	4 045	–31.9
France	53 728	31 904	28 599	27 049	26 941	–49.9
Germany	51 854	28 893	26 411	25 352	23 926	–53.9
Greece	6 856	5 035	3 962	3 741	3 712	–45.9
Hungary[a, b]	9 889	3 476	4 673	3 890	3 819	–61.4
Iceland	375	373	369	367	356	–5.2
Ireland	6 220	5 163	5 547	5 291	4 836	–22.2
Italy	24 757	18 661	17 902	16 032	16 987	–31.4
Japan	28 858	20 401	16 848	16 096	15 805	–45.2
Latvia[a]	2 298	1 090	1 340	1 342	1 289	–43.9
Liechtenstein	8	7	7	7	7	–15.4
Lithuania[a]	4 203	2 272	2 421	1 973	1 940	–53.8
Luxembourg	264	263	269	237	243	–8.2
Malta	59	56	54	55	54	–9.4
Monaco	4	4	2	2	2	–49.0
Netherlands	15 968	7 831	7 428	6 622	6 501	–59.3
New Zealand	5 087	6 709	7 402	7 010	6 945	36.5
Norway	3 832	2 293	2 219	2 238	2 082	–45.7
Poland[a, b]	29 950	19 605	20 546	20 202	20 724	–30.8
Portugal	3 532	3 584	3 514	3 374	3 438	–2.7
Romania[a, b]	22 504	9 667	9 594	9 199	9 243	–58.9
Russian Federation[a]	108 362	49 620	61 556	65 296	65 802	–39.3
Slovakia[a]	3 409	2 220	1 459	1 266	1 445	–57.6
Slovenia[a, b]	737	641	678	655	636	–13.8
Spain	12 450	11 812	11 580	10 235	9 856	–20.8
Sweden	4 692	3 751	3 562	3 494	3 371	–28.2
Switzerland	4 237	3 476	3 218	2 611	2 596	–38.7
Türkiye[d]	22 180	24 446	36 115	34 287	35 142	58.4
Ukraine[a]	48 368	24 459	32 786	26 867	28 293	–41.5
United Kingdom	42 343	19 198	17 618	17 105	16 911	–60.1
United States	–	–	–	–	–	–
Number of Parties showing a decrease in emissions of more than 1%:						*38*
Number of Parties showing a change in emissions within 1%:						*0*
Number of Parties showing an increase in emissions of more than 1%:						*4*

[a] EIT Party.
[b] 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.
[c] Emission estimates of the European Union are as reported for its 27 member States as a group and are reported separately from those of each individual member State.
[d] Decision 26/CP.7 invited Parties to recognize the special circumstances of Türkiye, which place it in a situation different from that of other Annex I Parties.

Table 9
Total anthropogenic N_2O emissions with emissions and removals from land use, land-use change and forestry

	kt CO_2 eq					*Change 1990–2023 (%)*
Party	*1990*	*2010*	*2020*	*2022*	*2023*	
Australia	16 992	20 692	17 735	19 893	20 290	19.4
Austria	4 297	3 404	3 398	3 319	3 246	–24.5
Belarus[a]	14 441	11 176	11 522	11 410	11 232	–22.2
Belgium	8 494	6 313	4 369	4 010	3 930	–53.7
Bulgaria[a, b]	8 947	3 625	4 287	4 328	4 340	–51.5
Canada	30 899	25 183	28 107	28 566	28 291	–8.4
Croatia[a]	2 580	2 286	1 637	1 488	1 469	–43.0
Cyprus	146	170	172	173	173	18.2
Czechia[a]	6 366	4 891	4 353	4 085	3 837	–39.7
Denmark	7 965	5 216	5 257	4 812	4 436	–44.3
Estonia[a]	1 456	930	1 111	1 145	1 107	–23.9
European Union[c]	300 431	196 086	187 592	177 088	176 208	–41.3
Finland	7 456	6 145	6 005	5 731	5 937	–20.4
France	55 793	33 329	29 396	27 898	27 749	–50.3
Germany	52 663	29 801	27 442	26 370	24 934	–52.7
Greece	6 862	5 051	3 976	3 758	3 753	–45.3
Hungary[a, b]	9 912	3 510	4 710	3 962	3 856	–61.1
Iceland	377	376	372	371	360	–4.4
Ireland	6 415	5 494	5 819	5 553	5 103	–20.5
Italy	25 668	19 062	18 412	16 702	17 596	–31.4
Japan	29 729	20 922	17 250	16 505	16 225	–45.4
Latvia[a]	2 784	1 612	1 902	1 912	1 804	–35.2
Liechtenstein	9	8	8	8	8	–12.5
Lithuania[a]	4 601	2 717	2 878	2 433	2 412	–47.6
Luxembourg	278	273	272	240	245	–11.8
Malta	60	56	54	55	54	–9.0
Monaco	2	4	2	2	2	6.0
Netherlands	16 086	7 939	7 522	6 721	6 603	–59.0
New Zealand	5 372	7 018	7 653	7 255	7 208	34.2
Norway	4 049	2 529	2 462	2 474	2 321	–42.7
Poland[a, b]	31 976	20 641	22 538	22 234	23 886	–25.3
Portugal	3 800	3 841	3 706	3 569	3 601	–5.2
Romania[a, b]	22 690	9 916	9 673	9 301	9 362	–58.7
Russian Federation[a]	114 915	58 223	72 363	73 534	75 822	–34.0
Slovakia[a]	3 527	2 253	1 496	1 310	1 473	–58.2
Slovenia[a, b]	801	687	713	693	668	–16.6
Spain	12 919	12 122	11 840	10 662	10 128	–21.6
Sweden	5 813	4 801	4 653	4 625	4 506	–22.5
Switzerland	4 285	3 518	3 260	2 656	2 639	–38.4
Türkiye[d]	22 228	24 480	36 210	34 357	35 215	58.4
Ukraine[a]	48 540	24 633	33 109	27 038	28 454	–41.4
United Kingdom	44 263	20 620	18 927	18 416	18 231	–58.8
United States	–	–	–	–	–	–
Number of Parties showing a decrease in emissions of more than 1%:						*37*
Number of Parties showing a change in emissions within 1%:						*0*
Number of Parties showing an increase in emissions of more than 1%:						*5*

[a] EIT Party.
[b] 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.
[c] Emission estimates of the European Union are as reported for its 27 member States as a group and are reported separately from those of each individual member State.
[d] Decision 26/CP.7 invited Parties to recognize the special circumstances of Türkiye, which place it in a situation different from that of other Annex I Parties.

Table 10
Total aggregate anthropogenic emissions of fluorinated gases

	kt CO_2 eq					*Change 1990–2023 (%)*
Party	*1990*	*2010*	*2020*	*2022*	*2023*	
Australia	5 565	7 134	11 309	11 446	11 903	113.9
Austria	1 550	1 876	2 194	1 909	1 818	17.3
Belarus[a]	–	–	–	–	–	–
Belgium	3 701	3 218	3 406	2 427	2 057	–44.4
Bulgaria[a, b]	3	434	788	700	651	19 040.4
Canada	10 930	9 439	12 212	11 587	11 361	3.9
Croatia[a]	1 128	574	1 582	1 822	1 939	71.9
Cyprus	3	211	355	413	433	15 748.6
Czechia[a]	87	2 573	3 817	3 751	3 713	4 188.9
Denmark	39	853	364	275	274	603.1
Estonia[a]	–	173	183	200	194	–
European Union[c]	49 671	93 366	74 340	67 247	62 264	25.4
Finland	56	1 346	932	793	729	1 194.1
France	11 159	18 686	12 435	9 962	9 002	–19.3
Germany	12 324	13 648	11 510	9 892	9 395	–23.8
Greece	1 165	4 339	4 955	4 651	4 584	293.4
Hungary[a, b]	341	1 509	1 971	1 896	1 816	432.7
Iceland	446	266	269	207	195	–56.4
Ireland	36	1 121	705	719	675	1 801.4
Italy	3 408	14 631	11 153	10 258	9 448	177.2
Japan	33 364	24 712	38 936	38 519	37 026	11.0
Latvia[a]	–	224	256	264	274	–
Liechtenstein	10	8	10	18	16	71.3
Lithuania[a]	–	252	487	500	485	–
Luxembourg	0.9	56	56	52	49	5 304.0
Malta	0.01	124	207	204	200	1 826 280.1
Monaco	8	6	5	6	6	–30.7
Netherlands	7 307	2 376	1 217	958	836	–88.6
New Zealand	839	1 077	1 439	1 510	1 165	38.9
Norway	5 663	1 045	1 029	946	932	–83.5
Poland[a, b]	132	4 726	4 865	4 426	4 004	2 926.2
Portugal	–	1 452	1 948	1 936	2 006	–
Romania[a, b]	4 006	962	1 913	2 024	2 037	–49.1
Russian Federation[a]	45 170	16 136	33 270	35 476	38 193	–15.4
Slovakia[a]	214	618	678	502	453	111.5
Slovenia[a, b]	220	259	308	307	314	42.9
Spain	3 659	15 828	5 069	5 516	4 051	10.7
Sweden	622	1 298	986	890	828	33.1
Switzerland	246	1 447	1 537	1 331	1 313	433.6
Türkiye[d]	425	3 204	6 192	10 400	9 913	2 234.2
Ukraine[a]	212	749	2 045	2 384	2 480	1 070.0
United Kingdom	14 788	11 714	9 109	7 920	7 402	–49.9
United States	–	–	–	–	–	–
Number of Parties showing a decrease in emissions of more than 1%:						*10*
Number of Parties showing a change in emissions within 1%:						*0*
Number of Parties showing an increase in emissions of more than 1%:						*27*

[a] EIT Party.

[b] 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.

[c] Emission estimates of the European Union are as reported for its 27 member States as a group and are reported separately from those of each individual member State.

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

Table 11
Net anthropogenic CO_2 emissions and removals from land use, land-use change and forestry

	kt CO_2 eq					*Change 1990–2023*
Party	*1990*	*2010*	*2020*	*2022*	*2023*	*(%)*
Australia	153 051	39 290	–80 093	–104 332	–95 825	–162.6
Austria	–13 974	–11 958	–1 162	–415	7 323	152.4
Belarus[a]	–22 307	–41 177	–30 544	–35 255	–41 310	–85.2
Belgium	–2 842	–529	–455	–573	–363	87.2
Bulgaria[a, b]	–17 211	–11 594	–9 388	–9 284	–8 740	49.2
Canada	48 651	39 109	23 994	49 907	3 275	–93.3
Croatia[a]	–6 396	–7 032	–5 877	–5 074	–5 670	11.3
Cyprus	–153	–267	–300	–301	–312	–103.7
Czechia[a]	–9 594	–8 444	7 441	1 413	–3 578	62.7
Denmark	6 237	1 864	806	– 849	–939	–115.1
Estonia[a]	–5 285	–5 117	795	– 149	1 783	133.7
European Union[c]	–266 651	–371 840	–218 709	–209 497	–226 476	15.1
Finland	–25 843	–24 187	–984	9 287	9 181	135.5
France	–25 066	–42 008	–39 214	–35 599	–38 854	–55.0
Germany	27 859	–3 017	69 094	68 161	59 895	115.0
Greece	–2 356	–3 445	–5 183	–5 260	–4 677	–98.6
Hungary[a, b]	–2 407	–4 680	–7 126	–6 918	–5 860	–143.4
Iceland	6 398	6 412	6 357	6 349	6 351	–0.7
Ireland	811	815	900	–231	–65	–108.0
Italy	–5 271	–40 282	–40 477	–40 279	–54 391	–931.8
Japan	–77 634	–79 108	–58 941	–52 440	–50 708	34.7
Latvia[a]	–13 531	–3 132	–878	4 243	3 227	123.8
Liechtenstein	3	17	–6	–8	–8	–337.8
Lithuania[a]	–4 739	–11 157	–5 633	–6 288	–5 730	–20.9
Luxembourg	2	–221	–547	–748	–678	–44 731.8
Malta	–10	14	8	0.2	0.4	103.7
Monaco	–0.1	–0.1	–0.1	–0.1	–0.1	32.2
Netherlands	3 725	3 863	2 633	2 781	3 115	–16.4
New Zealand	–24 704	–29 036	–21 301	–19 662	–20 511	17.0
Norway	–11 007	–26 061	–15 963	–8 988	–15 560	–41.4
Poland[a, b]	–24 326	–39 103	–26 109	–38 504	–35 828	–47.3
Portugal	3 572	–3 600	–3 791	–769	–2 242	–162.8
Romania[a, b]	–21 310	–35 311	–49 210	–45 836	–46 559	–118.5
Russian Federation[a]	–738 314	–1 700 275	–1 124 566	–1 199 953	–1 193 109	–61.6
Slovakia[a]	–9 023	–4 759	–7 244	–7 317	–7 818	13.4
Slovenia[a, b]	–4 822	–7 203	–4 372	–4 266	–4 323	10.3
Spain	–36 996	–47 965	–51 474	–51 443	–51 478	–39.1
Sweden	–61 077	–63 386	–40 962	–35 281	–32 894	46.1
Switzerland	–2 750	–2 267	–1 278	–1 493	1 240	145.1
Türkiye[d]	–66 572	–72 182	–57 964	–56 396	–69 379	–4.2
Ukraine[a]	–48 111	–21 170	–16 134	–15 869	–11 334	76.4
United Kingdom	3 173	–5 818	–6 581	–6 460	–5 935	–287.0
United States	–	–	–	–	–	–
Number of Parties showing a decrease in emissions of more than 1%:						*22*
Number of Parties showing a change in emissions within 1%:						*1*
Number of Parties showing an increase in emissions of more than 1%:						*19*

[a] EIT Party.

[b] 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.

[c] Emission estimates of the European Union are as reported for its 27 member States as a group and are reported separately from those of each individual member State.

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

Table 12
Anthropogenic CH_4 emissions from land use, land-use change and forestry

	kt CO_2 eq					*Change 1990–2023 (%)*
Party	*1990*	*2010*	*2020*	*2022*	*2023*	
Australia	23 176	23 700	15 947	17 406	17 990	–22.4
Austria	37	37	37	38	37	–0.4
Belarus[a]	9	6	27	9	9	3.9
Belgium	0.1	–	–	–	0.2	46.6
Bulgaria[a, b]	1	17	14	21	25	1 949.1
Canada	851	866	703	617	621	–27.0
Croatia[a]	1	2	36	37	2	12.9
Cyprus	0.03	0.7	0.4	0.3	0.3	909.6
Czechia[a]	19	12	10	21	4	–77.2
Denmark	389	386	382	390	397	1.9
Estonia[a]	75	77	78	78	78	3.1
European Union[c]	18 044	16 242	14 738	15 536	16 591	–8.1
Finland	1 894	1 268	953	928	926	–51.1
France	636	795	675	780	665	4.6
Germany	7 359	7 413	6 531	6 425	7 750	5.3
Greece	70	18	21	62	533	660.0
Hungary[a, b]	23	10	12	73	11	–52.6
Iceland	1 743	1 674	1 640	1 633	1 630	–6.5
Ireland	4 092	3 978	3 534	3 623	3 693	–9.8
Italy	727	194	175	375	193	–73.4
Japan	117	88	79	80	87	–25.3
Latvia[a]	523	536	845	889	889	69.9
Liechtenstein	–	–	–	–	–	–
Lithuania[a]	6	4	3	3	3	–54.2
Luxembourg	–	–	–	–	–	–
Malta	0.03	–	–	–	–	–
Monaco	–	–	–	–	–	–
Netherlands	577	614	595	591	588	1.9
New Zealand	78	103	106	40	46	–41.0
Norway	194	210	215	217	217	11.9
Poland[a, b]	55	14	59	22	10	–81.0
Portugal	574	209	79	148	47	–91.9
Romania[a, b]	0.2	0.4	20	47	15	8 988.3
Russian Federation[a]	11 451	14 421	16 542	10 377	11 331	–1.0
Slovakia[a]	12	22	27	46	15	21.7
Slovenia[a, b]	1	0.1	0.3	9	0.04	–96.4
Spain	351	98	130	395	173	–50.7
Sweden	616	534	520	536	535	–13.0
Switzerland	35	14	13	18	16	–53.4
Türkiye[d]	94	26	122	72	71	–25.0
Ukraine[a]	42	42	330	44	12	–72.7
United Kingdom	5 572	5 607	5 691	5 721	5 753	3.3
United States	–	–	–	–	–	–
Number of Parties showing a decrease in emissions of more than 1%:						*21*
Number of Parties showing a change in emissions within 1%:						*1*
Number of Parties showing an increase in emissions of more than 1%:						*16*

[a] EIT Party.

[b] 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.

[c] Emission estimates of the European Union are as reported for its 27 member States as a group and are reported separately from those of each individual member State.

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

Table 13
Anthropogenic N_2O emissions from land use, land-use change and forestry

	kt CO_2 eq					*Change 1990–2023 (%)*
Party	*1990*	*2010*	*2020*	*2022*	*2023*	
Australia	4 475	5 391	3 509	3 924	4 133	–7.6
Austria	180	187	175	171	169	–6.0
Belarus[a]	14	15	29	10	9	–34.4
Belgium	2	50	56	57	57	2 398.5
Bulgaria[a, b]	71	69	105	109	115	60.8
Canada	346	360	309	273	273	–21.1
Croatia[a]	45	127	184	170	143	219.8
Cyprus	0.03	2	1	1	1	3 241.2
Czechia[a]	20	11	8	14	5	–74.3
Denmark	73	42	40	41	42	–42.9
Estonia[a]	240	255	268	269	270	12.6
European Union[c]	11 284	9 803	10 147	10 675	11 465	1.6
Finland	1 513	1 880	1 844	1 851	1 892	25.1
France	2 066	1 425	797	848	808	–60.9
Germany	809	909	1 030	1 018	1 009	24.6
Greece	6	16	14	17	41	611.3
Hungary[a, b]	24	33	38	72	38	57.6
Iceland	2	2	3	3	4	170.3
Ireland	195	331	272	263	267	36.5
Italy	912	401	510	670	609	–33.2
Japan	871	521	401	409	420	–51.8
Latvia[a]	486	522	563	570	514	5.9
Liechtenstein	0.3	0.5	0.5	0.5	0.5	74.8
Lithuania[a]	399	445	458	460	472	18.5
Luxembourg	13	10	3	3	2	–81.8
Malta	0.3	0.1	0.6	0.6	0.6	76.0
Monaco	0.01	0.01	0.003	0.01	0.004	–59.7
Netherlands	118	108	94	98	101	–13.8
New Zealand	293	312	251	249	268	–8.4
Norway	217	236	242	237	239	10.3
Poland[a, b]	2 026	1 036	1 993	2 032	3 161	56.0
Portugal	268	256	192	195	163	–39.2
Romania[a, b]	186	249	80	102	119	–36.0
Russian Federation[a]	6 553	8 604	10 808	8 238	10 020	52.9
Slovakia[a]	118	33	37	44	27	–77.1
Slovenia[a, b]	63	47	35	38	32	–49.3
Spain	470	310	260	427	272	–42.1
Sweden	1 121	1 050	1 091	1 131	1 135	1.3
Switzerland	48	42	42	45	43	–11.1
Türkiye[d]	48	34	96	69	73	49.7
Ukraine[a]	172	175	322	171	161	–6.0
United Kingdom	1 920	1 422	1 309	1 311	1 320	–31.2
United States	–	–	–	–	–	–
Number of Parties showing a decrease in emissions of more than 1%:						*21*
Number of Parties showing a change in emissions within 1%:						*0*
Number of Parties showing an increase in emissions of more than 1%:						*21*

[a] EIT Party.

[b] 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.

[c] Emission estimates of the European Union are as reported for its 27 member States as a group and are reported separately from those of each individual member State.

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

Table 14
Indirect CO_2 emissions

	kt CO_2 eq					*Change 1990–2023 (%)*
Party	*1990*	*2010*	*2020*	*2022*	*2023*	
Australia	–	–	–	–	–	–
Austria	–	–	–	–	–	–
Belarus[a]	–	–	–	–	–	–
Belgium	–	–	–	–	–	–
Bulgaria[a, b]	93	74	60	63	–	–
Canada	–	–	–	–	–	–
Croatia[a]	–	–	–	–	–	–
Cyprus	8	12	9	6	7	–12.3
Czechia[a]	1 654	826	537	488	431	–74.0
Denmark	1 245	584	315	287	276	–77.8
Estonia[a]	–	–	–	–	–	–
European Union[c]	7 642	4 848	3 891	3 618	3 442	–55.0
Finland	165	68	67	51	48	–70.8
France	1 659	1 000	830	856	800	–51.8
Germany	–	–	–	–	–	–
Greece	–	–	–	–	–	–
Hungary[a, b]	–	–	–	–	–	–
Iceland	–	–	–	–	–	–
Ireland	–	–	–	–	–	–
Italy	1 391	996	890	807	855	–38.6
Japan	5 490	2 442	1 873	1 836	1 807	–67.1
Latvia[a]	41	16	13	11	12	–71.4
Liechtenstein	–	–	–	–	–	–
Lithuania[a]	34	32	38	38	39	12.3
Luxembourg	–	–	–	–	–	–
Malta	–	–	–	–	–	–
Monaco	0.3	0.3	0.2	0.3	0.3	3.4
Netherlands	917	458	419	457	433	–52.8
New Zealand	–	–	–	–	–	–
Norway	463	170	149	123	108	–76.7
Poland[a, b]	623	546	528	386	376	–39.6
Portugal	93	186	140	128	126	34.9
Romania[a, b]	–	–	–	–	–	–
Russian Federation[a]	–	–	–	–	–	–
Slovakia[a]	88	49	46	40	41	–53.2
Slovenia[a, b]	–	–	–	–	–	–
Spain	–	–	–	–	–	–
Sweden	–	–	–	–	–	–
Switzerland	392	133	100	94	94	–76.2
Türkiye[d]	–	–	–	–	–	–
Ukraine[a]	–	–	–	–	–	–
United Kingdom	–	–	–	–	–	–
United States	–	–	–	–	–	–
Number of Parties showing a decrease in emissions of more than 1%:						*14*
Number of Parties showing a change in emissions within 1%:						*0*
Number of Parties showing an increase in emissions of more than 1%:						*3*

[a] EIT Party.
[b] 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.
[c] Emission estimates of the European Union are as reported for its 27 member States as a group and are reported separately from those of each individual member State.
[d] Decision 26/CP.7 invited Parties to recognize the special circumstances of Türkiye, which place it in a situation different from that of other Annex I Parties.