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National communications and greenhouse gas inventory data from Parties included in Annex I to the Convention
Report on national greenhouse gas inventory data from Parties included in Annex I to the Convention for the period 1990–2009

National greenhouse gas inventory data for the period 1990–2009

Note by the secretariat*

Summary

In 2011, all 42 Parties included in Annex I to the Convention (Annex I Parties) submitted their greenhouse gas (GHG) inventory common reporting format (CRF) tables and national inventory reports (NIRs). Thirty-six sets of CRF tables and 35 NIRs were received by the deadline of 15 April. Over the period 1990–2009, total aggregate GHG emissions excluding emissions/removals from land use, land-use change and forestry (LULUCF) for all Annex I Parties decreased by 11.5 per cent, and total GHG emissions/removals including LULUCF decreased by 17.6 per cent. For Annex I Parties with economies in transition (Annex I EIT Parties), GHG emissions excluding and including LULUCF decreased by 41.4 per cent and 54.4 per cent, respectively. For Annex I non-EIT Parties, GHG emissions excluding LULUCF increased by 2.1 per cent and GHG emissions including LULUCF increased by 0.6 per cent. Information in this document is based on national GHG inventory submissions received as at 24 October 2011. At the time of publication, the annual review process was still ongoing, and therefore data presented in this document may not reflect the latest information provided by Parties. The latest GHG inventory data are available on the UNFCCC website.

* This document was submitted late in order to take into account the latest submissions from Parties.

Contents

I. Introduction

A. Mandate

1. The Conference of the Parties (COP), by its decisions 9/CP.2, 3/CP.5 and 18/CP.8, requested that Parties included in Annex I to the Convention (Annex I Parties) submit national inventory data on greenhouse gas (GHG) emissions by sources and removals by sinks by 15 April each year. Under the "Guidelines for the technical review of greenhouse gas inventories from Parties included in Annex I to the Convention" adopted by the COP in decision 19/CP.8, the secretariat is requested[1] to prepare annually a report on GHG inventory data submitted by Annex I Parties for consideration by the COP and the Subsidiary Body for Implementation (SBI).

B. Scope of the note

2. The information in this document is based on national GHG inventory submissions received from all 42 Annex I Parties as at 24 October 2011. It includes data from Malta, which submitted its national GHG inventory as an Annex I Party[2] for the first time this year.

3. This document shows the status of reporting of GHG inventories by Annex I Parties in 2011 (chapter II) and provides a summary of the latest available data on GHG emissions and removals for the period 1990–2009 (chapter III). Data are provided for carbon dioxide (CO_2), methane (CH_4) and nitrous oxide (N_2O), as well as for hydrofluorocarbons (HFCs), perfluorocarbons (PFCs) and sulphur hexafluoride (SF_6) taken together. Data are also provided for total[3] aggregate[4] GHG emissions, both including and excluding net GHG emissions/removals from land use, land-use change and forestry (LULUCF).

4. At the time of publication of this document, the annual review process was still ongoing, and therefore data presented here may not reflect the latest information provided by Parties. The latest GHG inventory data are available on the UNFCCC website.[5]

C. Possible action by the Subsidiary Body for Implementation and the Conference of the Parties

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

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[1] FCCC/CP/2002/8, annex II, paragraphs 42 and 43.

[2] In accordance with decision 3/CP.15 and following the notification from the United Nations Depository, Malta became an Annex I Party under the Convention on 26 October 2010.

[3] The term 'total' implies that emissions from sectors of the common reporting format are summed; the inclusion of land use, land-use change and forestry in the sum is indicated separately.

[4] The term 'aggregate' implies that GHG emissions/removals are calculated as a weighted sum of CO_2, CH_4, N_2O, HFCs, PFCs and SF_6 using the global warming potentials agreed under the Convention.

[5] <http://unfccc.int/national_reports/annex_i_ghg_inventories/national_inventories_submissions/items/5888.php>.

II. Status of reporting

A. Timeliness and completeness of submissions

6. In accordance with the UNFCCC reporting guidelines on annual inventories,[6] Annex I Parties are required to submit annually a national inventory report (NIR) and common reporting format (CRF) tables containing data from the base year up to two years prior to the year of submission. In 2011, all 42 Annex I Parties provided GHG data for all years from 1990[7] to 2009.

7. By the due date of 15 April, 36 sets of CRF tables and 35 NIRs were received, and all Parties submitted their CRF tables and NIRs within six weeks of the deadline. Table 1 presents the status of reporting of GHG inventory submissions for 2011.

Table 1
Greenhouse gas inventory submissions from Annex I Parties in 2011

Party	*CRF submission date*[a]	*Party*	*CRF submission date*[a]
Australia	15 April 2011	Liechtenstein	15 April 2011
Austria	14 April 2011	Lithuania	15 April 2011
Belarus	15 April 2011	Luxembourg	15 April 2011
Belgium	15 April 2011	Malta	13 April 2011
Bulgaria	14 April 2011	Monaco	9 March 2011
Canada	*16 May 2011*	Netherlands	15 April 2011
Croatia	14 April 2011	New Zealand	15 April 2011
Czech Republic	15 April 2011	Norway	15 April 2011
Denmark	15 April 2011	Poland	15 April 2011
Estonia	15 April 2011	Portugal	15 April 2011
European Union	15 April 2011	Romania	15 April 2011
Finland	15 April 2011	Russian Federation	14 April 2011
France	11 April 2011	Slovakia	15 April 2011
Germany	15 April 2011	Slovenia	*18 April 2011*
Greece	*19 April 2011*	Spain	14 April 2011
Hungary	*21 April 2011*	Sweden	31 March 2011
Iceland	*16 April 2011*	Switzerland	15 April 2011
Ireland	13 April 2011	Turkey	13 April 2011
Italy	14 April 2011	Ukraine	15 April 2011
Japan	*26 April 2011*	United Kingdom	15 April 2011
Latvia	15 April 2011	United States	13 April 2011

Abbreviation: CRF = common reporting format.

[a] The date of submission of the national inventory report may be different. Dates after the submission deadline of 15 April 2011 are shown in italics.

[6] "Updated UNFCCC reporting guidelines on annual inventories following incorporation of the provisions of decision 14/CP.11" (FCCC/SBSTA/2006/9).

[7] The Parties that may use a base year other than 1990, as stipulated in decisions 9/CP.2 and 11/CP.4, also provided data for their respective base years. These Parties and their base years are Bulgaria (1988), Hungary (average of 1985–1987), Poland (1988), Romania (1989) and Slovenia (1986).

8. After the initial submissions, 23 Parties submitted revised versions of their CRF tables, and 11 Parties resubmitted their NIR.

9. Since 1998, the number of national GHG inventories submitted by Annex I Parties has been increasing continuously, and since 2006, all sets of CRF tables have been submitted annually. Since 2009, all NIRs have been submitted annually.

B. Recalculations

10. In accordance with the UNFCCC reporting guidelines on annual inventories, Parties should, when necessary, conduct recalculations in order to improve the quality of emission estimates and ensure the consistency of the time series. In 2011, the recalculations performed reflecting changes in activity data, emission factors and methodologies used had an impact on 1990[8] GHG emissions of 40 Parties.

11. The impact of recalculations on GHG emissions in 1990 varied widely (table 2). For total aggregate GHG emissions excluding LULUCF, the change was less than 1 per cent for 33 Parties and more than 2 per cent for four Parties. For total aggregate GHG emissions including LULUCF, the change was less than 1 per cent for 17 Parties and more than 3 per cent for 14 Parties.

Table 2
Inventory recalculations by Annex I Parties in 2011

Party	*Impact on 1990 GHG emissions excluding LULUCF (%)*	*Impact on 1990 GHG emissions including LULUCF (%)*
Australia	0.02	–0.62
Austria	0.0003	–0.92
Belarus	–0.87	0.02
Belgium	–0.04	0.81
Bulgaria	–5.34	–6.31
Canada	–0.10	–3.06
Croatia	–0.003	5.87
Czech Republic	0.65	0.66
Denmark	–1.50	–1.00
Estonia	–0.09	–12.04
European Union	0.39	0.40
Finland	–0.11	1.60
France	–0.02	–1.22
Germany	–0.27	–1.16
Greece	0.13	0.11
Hungary	–0.82	–0.77
Iceland	0.77	–21.26
Ireland	0.06	–1.41
Italy	0.41	1.12
Japan	–0.17	–0.69
Latvia	–1.13	39.72

[8] Unless otherwise specified, base year data are used instead of 1990 data (see footnote 7 above).

Party	*Impact on 1990 GHG emissions excluding LULUCF (%)*	*Impact on 1990 GHG emissions including LULUCF (%)*
Liechtenstein	0.01	0.01
Lithuania	–2.98	27.26
Luxembourg	–2.22	–2.16
Malta	–	–
Monaco	0.11	0.13
Netherlands	–0.07	–0.03
New Zealand	–3.41	18.35
Norway	0.04	7.14
Poland	0.09	1.53
Portugal	0.22	–21.43
Romania	0.56	4.91
Russian Federation	1.15	1.62
Slovakia	0.29	–0.49
Slovenia	–	3.46
Spain	–0.69	7.47
Sweden	0.14	–32.81
Switzerland	–0.10	0.36
Turkey	–	–
Ukraine	0.56	0.44
United Kingdom	0.61	0.73
United States	0.90	1.97

Abbreviations: GHG = greenhouse gas, LULUCF = land use, land-use change and forestry.

12. Summary information on Annex I Parties' GHG emissions based on their 2010 submissions is contained in document FCCC/SBI/2010/18. A comparison of the estimates of total aggregate GHG emissions in 1990 reported in that document and those reported in the present document, based on Parties' 2011 submissions, is presented in table 3.

Table 3
Comparison of 2011 and 2010 estimates of total aggregate greenhouse gas emissions from Annex I Parties in 1990

	2010 (FCCC/SBI/2010/18)	*2011 (FCCC/SBI/2011/9)*	*Explanation of the difference between 2011 and 2010 estimates*
Total aggregate GHG emissions excluding LULUCF (thousands of Tg CO_2 eq)			
All Annex I Parties	18.91	19.04	Aggregate impacts of inventory recalculations by individual Annex I Parties
Annex I EIT Parties	5.91	5.97	Inventory recalculations, for example, in the Russian Federation and Ukraine

	2010 (FCCC/SBI/2010/18)	*2011 (FCCC/SBI/2011/9)*	*Explanation of the difference between 2011 and 2010 estimates*
Annex I non-EIT Parties	12.99	13.07	Inventory recalculations, for example, in the United Kingdom and the United States
Total aggregate GHG emissions including LULUCF (thousands of Tg CO_2 eq)			
All Annex I Parties	17.52	17.67	Aggregate impacts of inventory recalculations by individual Annex I Parties
Annex I EIT Parties	5.79	5.85	Inventory recalculations, for example, in Lithuania, Romania and the Russian Federation
Annex I non-EIT Parties	11.73	11.82	Inventory recalculations, for example, in Italy, Spain and the United States

Abbreviations: EIT = economies in transition, GHG = greenhouse gas, LULUCF = land use, land-use change and forestry.

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

A. Total aggregate greenhouse gas emissions

13. From 1990 to 2009, total aggregate GHG emissions excluding emissions/removals from LULUCF for all Annex I Parties decreased by 11.5 per cent, from 19,040.0 to 16,841.5 Tg[9] CO_2 eq (figures 1 and 2). Total aggregate GHG emissions including LULUCF decreased by 17.6 per cent, from 17,673.8 to 14,560.5 Tg CO_2 eq. Compared with 2000, GHG emissions in 2009 decreased by 5.2 per cent (excluding LULUCF) and by 9.2 per cent (including LULUCF). Between 2008 and 2009, GHG emissions excluding and including LULUCF decreased by 6.0 and 7.2 per cent, respectively.

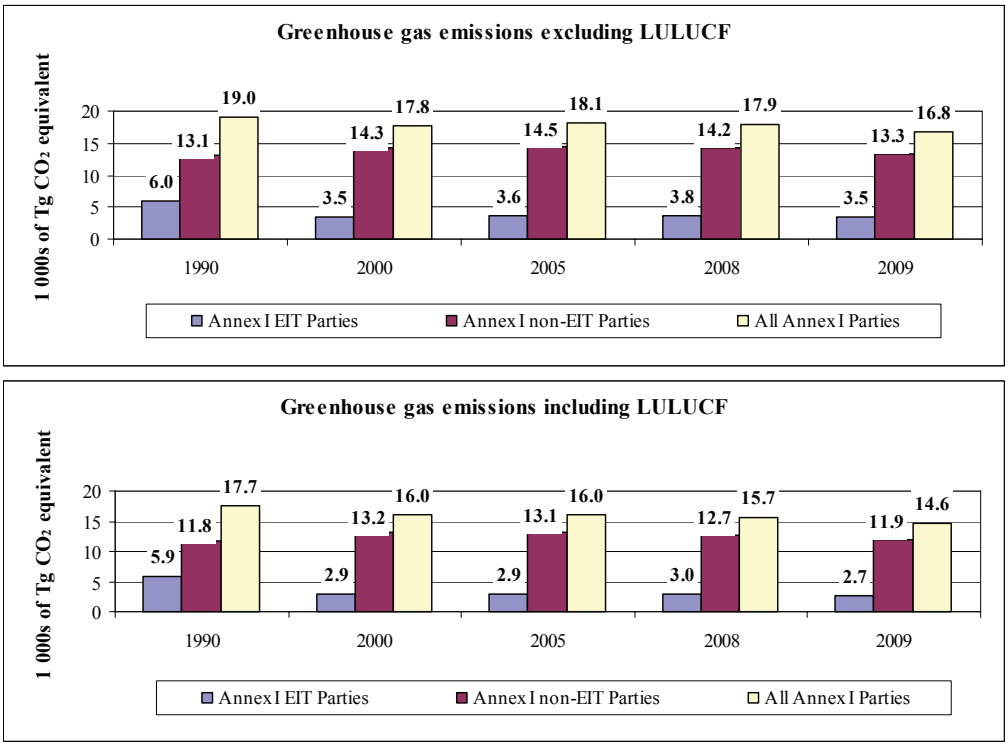
14. For Annex I Parties with economies in transition (Annex I EIT Parties), GHG emissions excluding LULUCF decreased by 41.4 per cent over the period 1990–2009, from 5,969.1 to 3,500.7 Tg CO_2 eq; GHG emissions including LULUCF decreased by 54.4 per cent. From 2000 to 2009, GHG emissions excluding LULUCF from these Parties increased by 0.1 per cent, whereas GHG emissions including LULUCF decreased by 6.9 per cent. From 2008 to 2009, emissions excluding LULUCF decreased by 6.8 per cent and emissions including LULUCF decreased by 10.9 per cent.

15. For Annex I non-EIT Parties, GHG emissions increased by 2.1 per cent excluding LULUCF and by 0.6 per cent including LULUCF from 1990 to 2009. From 2000 to 2009, GHG emissions decreased by 6.4 per cent excluding LULUCF and by 9.7 per cent including LULUCF. Between 2008 and 2009, GHG emissions also decreased, by 5.8 per cent excluding LULUCF and by 6.4 per cent including LULUCF.

[9] One teragram (Tg) equals one million tonnes.

Figure 1

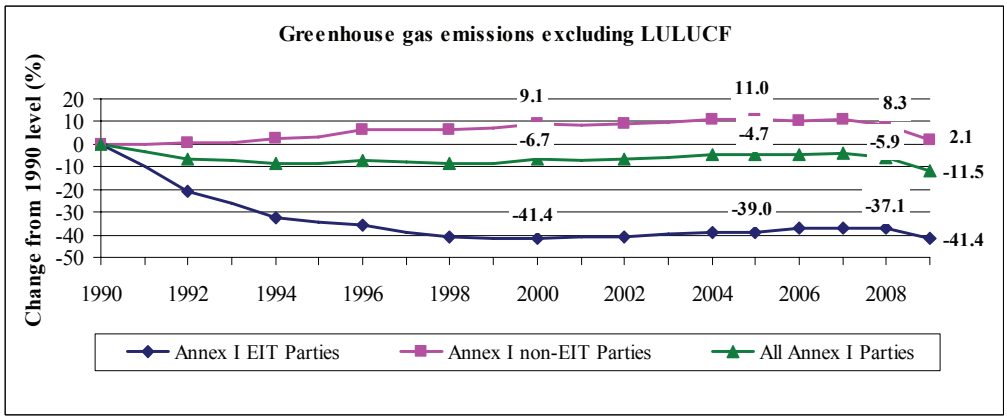
Greenhouse gas emissions from Annex I Parties, 1990, 2000, 2005, 2008 and 2009

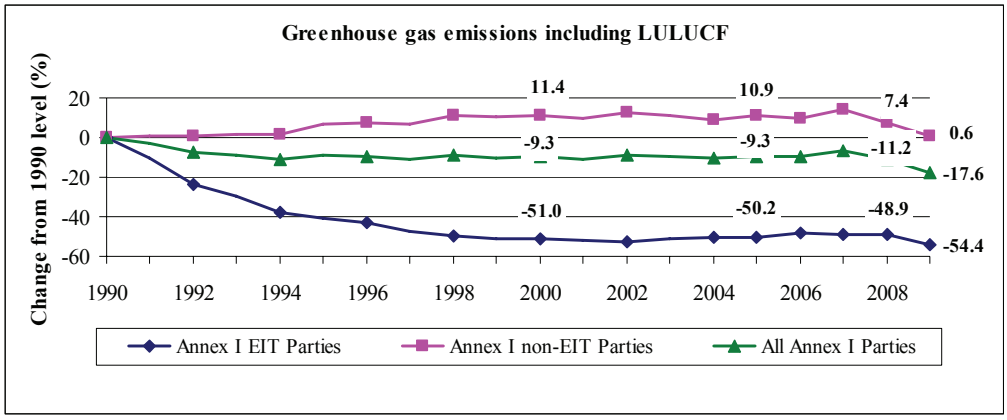


Abbreviations: EIT = economies in transition, LULUCF = land use, land-use change and forestry.

Figure 2

Changes in greenhouse gas emissions from Annex I Parties, 1990–2009

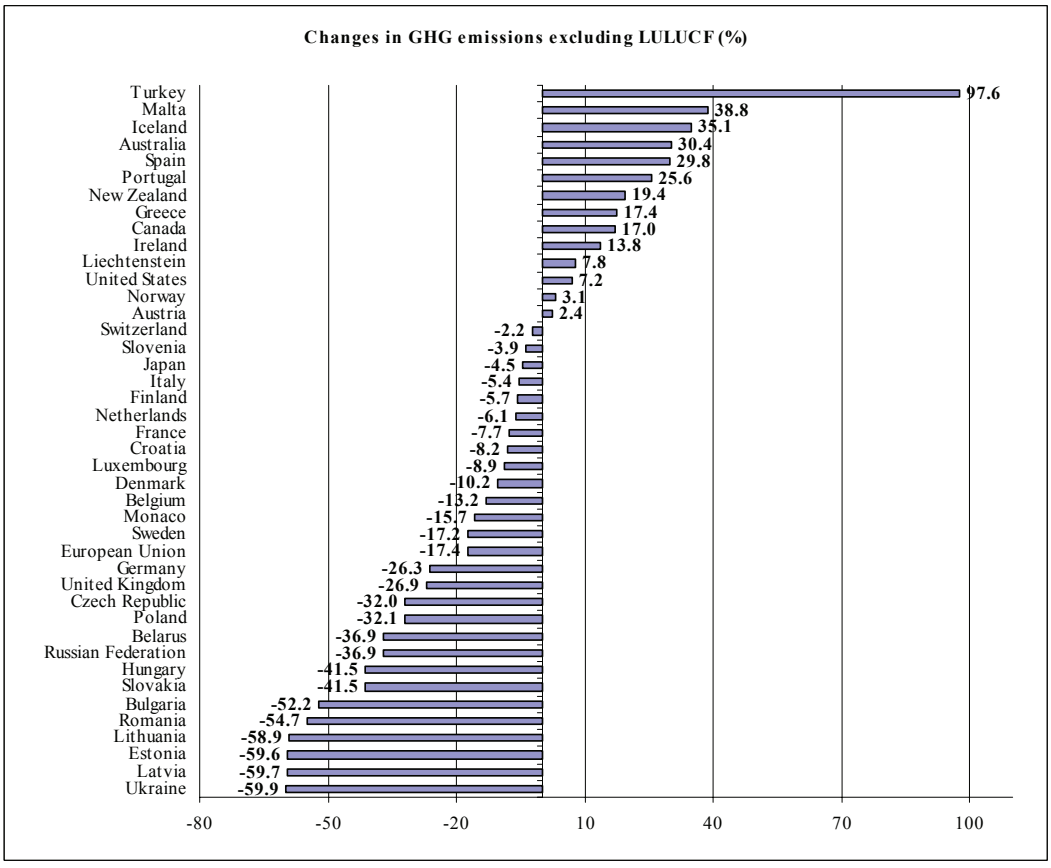


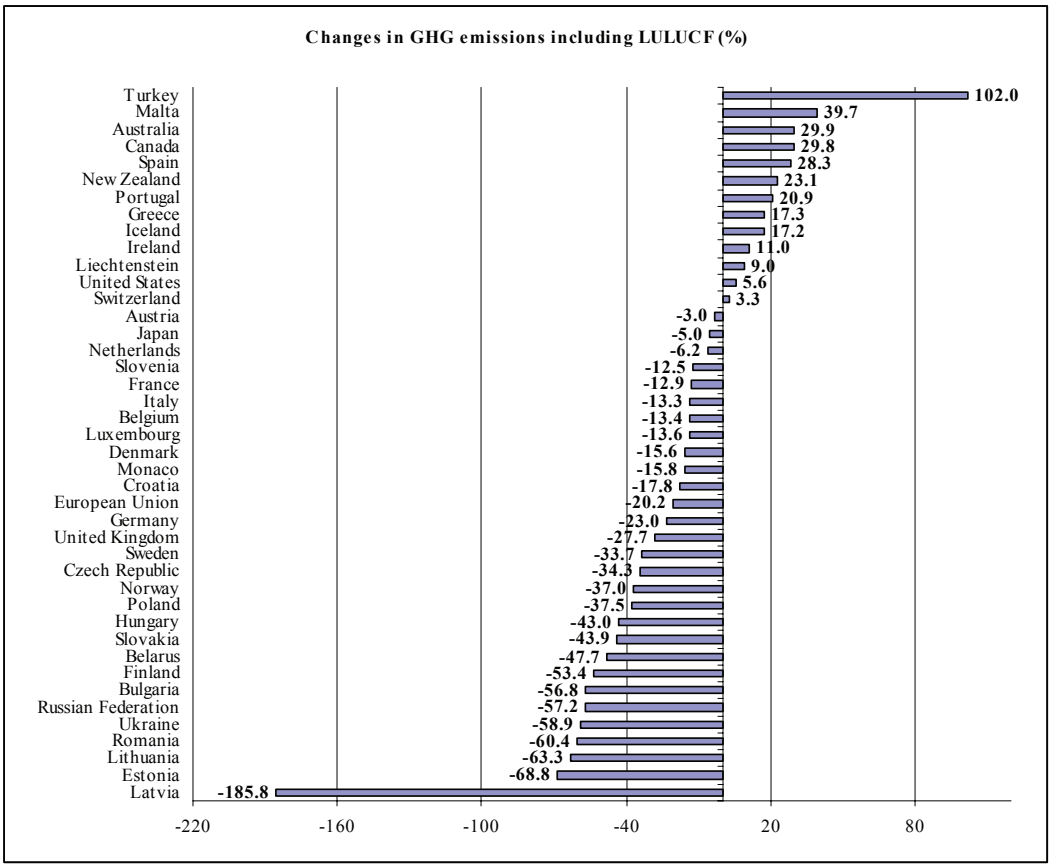


Abbreviations: EIT = economies in transition, LULUCF = land use, land-use change and forestry.

16. The changes in total aggregate GHG emissions over the period 1990–2009 varied considerably among countries (figure 3). For emissions excluding LULUCF, Ukraine has the largest decrease (by 59.9 per cent); for emissions including LULUCF, Latvia has the largest decrease (by 185.8 per cent). On the other hand, Turkey has the greatest increase in both emissions excluding LULUCF (by 97.6 per cent) and emissions including LULUCF (by 102.0 per cent).

Figure 3
Changes in total aggregate emissions of individual Annex I Parties, 1990–2009





Abbreviations: GHG = greenhouse gas, LULUCF = land use, land-use change and forestry.

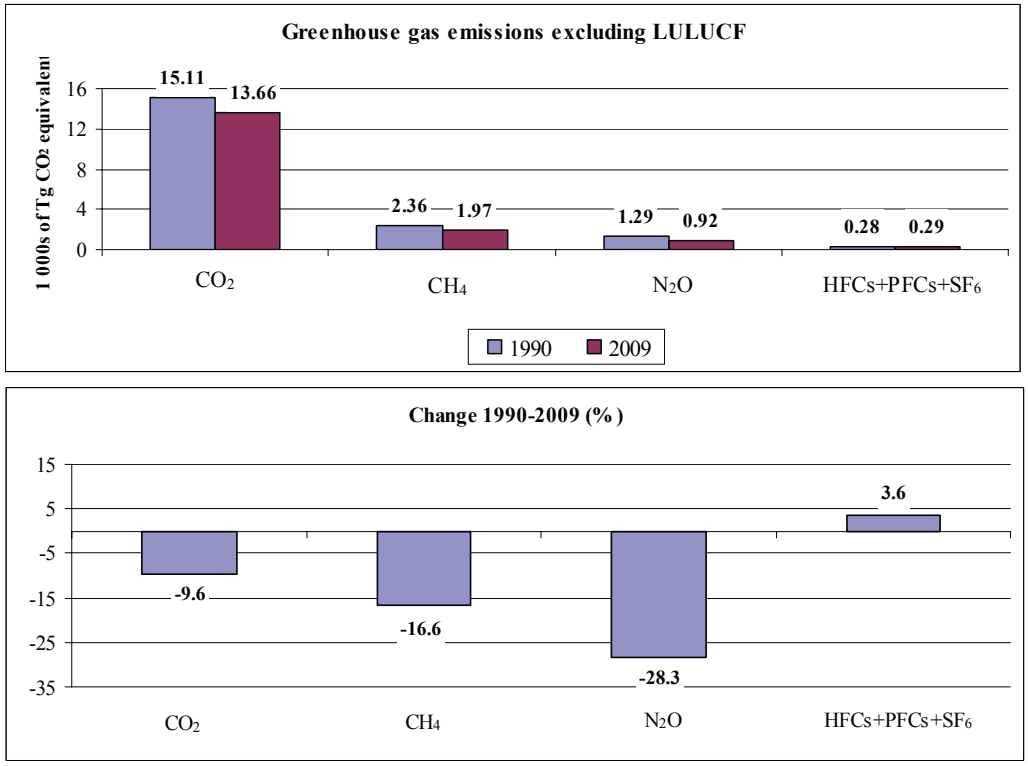
B. Greenhouse gas emissions by gas

17. Throughout the entire time series, CO_2 accounted for the largest share of total emissions. In 1990 and 2009, it contributed 79.4 per cent and 81.1 per cent, respectively, to total emissions. CH_4 was the second highest contributor to total emissions (by about 12 per cent) in both 1990 and 2009, followed by N_2O. The emissions of HFCs, PFCs and SF_6 taken together contributed approximately 1.5 per cent in both years.

18. Figure 4 illustrates the share of each GHG in total emissions excluding LULUCF for both years, and the changes in total emissions of each GHG over the period 1990–2009. Emissions of CO_2, CH_4 and N_2O decreased, whereas emissions of HFCs, PFCs and SF_6 taken together increased by 3.6 per cent.

19. Between 2008 and 2009, emissions of all gases decreased – CO_2 by 6.7 per cent; CH_4 by 1.8 per cent and N_2O by 4.1 per cent. Emissions of HFCs, PFCs and SF_6 taken together decreased by 4.2 per cent.

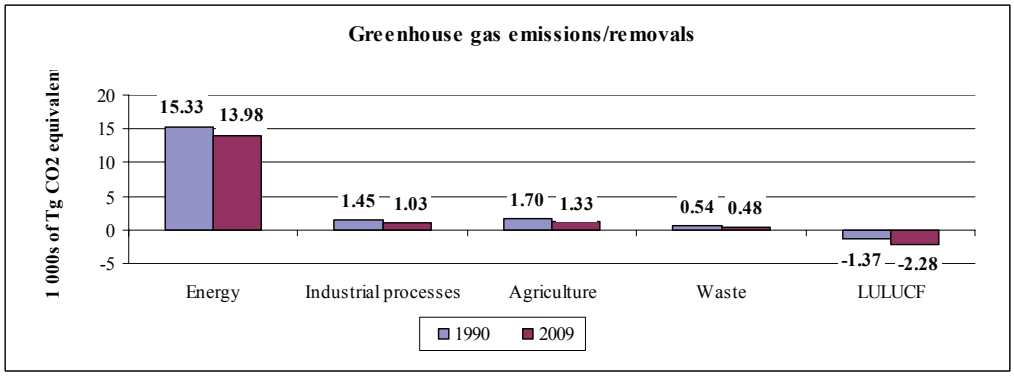
Figure 4
Greenhouse gas emissions excluding LULUCF from Annex I Parties by gas, 1990 and 2009

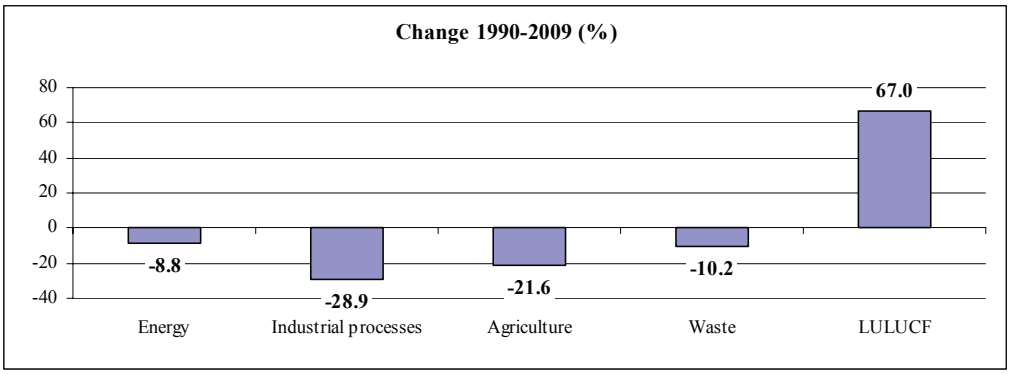


C. Greenhouse gas emissions by sector

20. For all Annex I Parties taken together, emissions from all sectors decreased from 1990 to 2009. The largest decrease occurred in industrial processes, followed by agriculture, waste and energy. Over the same period, net GHG removals by LULUCF increased by 67.0 per cent, from –1,366.1 Tg CO_2 eq to –2,281.0 Tg CO_2 eq. Figure 5 shows the trends in Annex I Parties' total aggregate GHG emissions by sector.

Figure 5
Greenhouse gas emissions/removals from Annex I Parties by sector, 1990 and 2009[a]





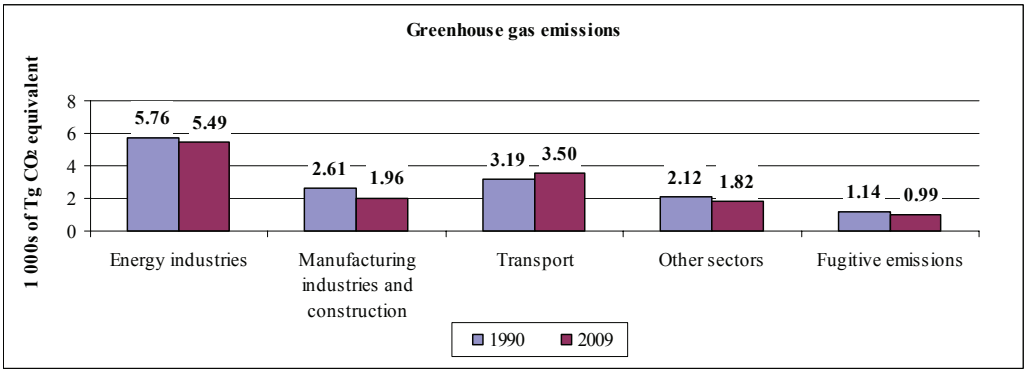
Abbreviation: LULUCF = land use, land-use change and forestry.

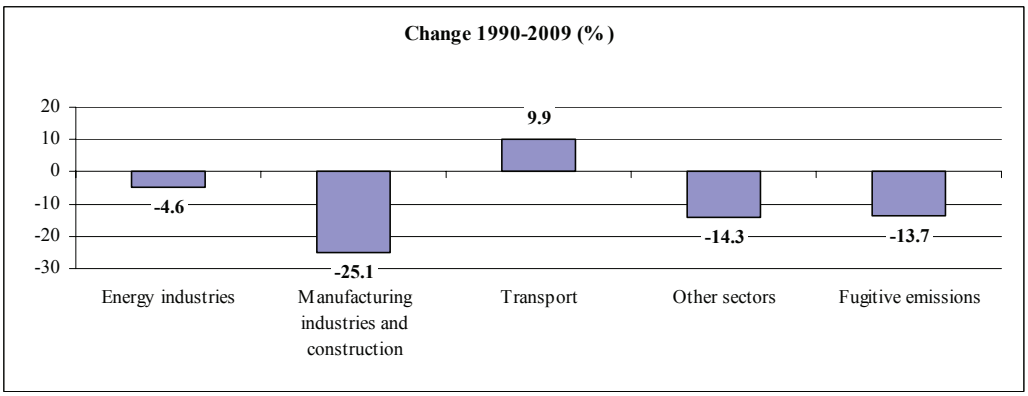
[a] The sector solvent and other product use is not included in the figure because its contribution to total emissions is very small. Emissions from this sector decreased by 26.6 per cent.

21. Between 2008 and 2009, emissions from all sectors, except waste, decreased (by 5.9 per cent in energy, by 14.6 per cent in industrial processes and by 1.8 per cent in agriculture). Emissions from the waste sector increased by 0.5 per cent and net GHG removals by LULUCF increased by 2.7 per cent.

22. Figure 6 shows the profile of, and trends in, emissions within the energy sector from 1990 to 2009. Only emissions from transport increased (by 9.9 per cent), and the largest reduction occurred in manufacturing industries and construction (25.1 per cent).

Figure 6
Greenhouse gas emissions from Annex I Parties in the energy sector, 1990 and 2009

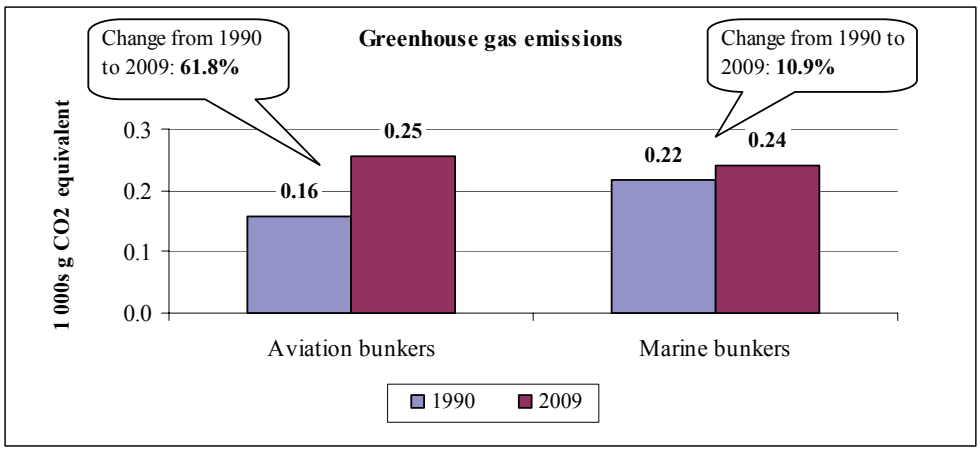




23. From 2008 to 2009, emissions from all activities within the energy sector decreased, with emissions from manufacturing industries and construction having the largest decrease (9.4 per cent).

24. Increases in emissions over the period 1990–2009 relating to fuels sold for use in international aviation and marine transportation are presented in figure 7. GHG emissions increased by 61.8 per cent for aviation and by 10.9 per cent for marine transportation.

Figure 7
Greenhouse gas emissions from Annex I Parties from international bunker fuels, 1990 and 2009



25. Between 2008 and 2009, emissions from international bunkers decreased – by 7.4 per cent for aviation and by 9.3 per cent for marine transportation.

26. Table 4 shows a comparison between the percentage changes in total aggregate emissions from 1990 to the latest available year reported in document FCCC/SBI/2010/18, based on Parties' 2010 submissions, and those reported in the present document, based on Parties' 2011 submissions. It also provides explanations for the differences in the estimates.

Table 4
Comparison of 2011 and 2010 changes in total aggregate greenhouse gas emissions from Annex I Parties

	2010 (FCCC/SBI/2010/18)	*2011 (FCCC/SBI/2011/9)*	*Explanation of the difference between 2011 and 2010 estimates*
Changes in total aggregate GHG emissions excluding LULUCF from 1990 to the latest available year (%)			
All Annex I Parties	–6.1	–11.5	Combined impact of changes for individual Annex I Parties
Annex I EIT Parties	–36.8	–41.4	Decreases in emissions of all Annex I EIT Parties between 2008 and 2009
Annex I non-EIT Parties	7.9	2.1	Decreases in emissions between 2008 and 2009, for example, in Australia, Germany, Japan and the United States

	2010 (FCCC/SBI/2010/18)	*2011 (FCCC/SBI/2011/9)*	*Explanation of the difference between 2011 and 2010 estimates*
Changes in total aggregate GHG emissions including LULUCF from 1990 to the latest available year (%)			
All Annex I Parties	–10.4	–17.6	Combined impact of changes for individual Annex I Parties
Annex I EIT Parties	–48.5	–54.4	Decreases in emissions of all Annex I EIT Parties between 2008 and 2009
Annex I non-EIT Parties	8.3	0.6	Decreases in emissions between 2008 and 2009, for example, in Canada, Italy, the United Kingdom and the United States

Abbreviations: EIT = economies in transition, GHG = greenhouse gas, LULUCF = land use, land-use change and forestry.

D. Emissions data for individual Annex I Parties

27. Detailed GHG data for Annex I Parties are presented in tables 5–16. Total aggregate GHG emissions excluding and including emissions/removals from LULUCF are provided in tables 5 and 6; emissions of CO_2, CH_4 and N_2O (excluding and including emissions/removals from LULUCF) in tables 7–12; emissions of HFCs, PFCs and SF_6 taken together in table 13; and emissions/removals from LULUCF in tables 14–16.

28. 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 emissions data. Negative values mean removals; positive values mean emissions.

29. The changes in emissions from 1990 to 2009 were calculated using the exact (not rounded) values and may differ from a ratio calculated with the rounded numbers provided in the tables. In these tables, an en dash (–) has been inserted to denote percentage changes exceeding 10,000 per cent.

Table 5
Total aggregate anthropogenic emissions of CO_2, CH_4, N_2O, HFCs, PFCs and SF_6 excluding emissions/removals from land use, land-use change and forestry, 1990, 2000, 2005, 2008 and 2009

	Gg CO_2 equivalent					*Change from 1990*
Party	*1990*	*2000*	*2005*	*2008*	*2009*	*to 2009 (%)*
Australia	418 470	496 251	527 850	550 921	545 858	30.4
Austria	78 171	80 476	92 884	86 961	80 059	2.4
Belarus*	139 179	79 174	84 182	90 607	87 887	–36.9
Belgium	143 344	145 415	142 729	135 155	124 440	–13.2
Bulgaria*[a]	124 510	63 351	67 115	69 033	59 496	–52.2
Canada	591 262	717 570	733 483	733 712	691 834	17.0
Croatia*	31 440	26 016	30 273	30 961	28 865	–8.2
Czech Republic*	196 448	148 116	145 387	141 803	133 603	–32.0
Denmark	69 391	69 283	65 097	65 151	62 323	–10.2
Estonia*	41 235	17 705	19 032	20 141	16 657	–59.6
European Union[b]	5 588 798	5 085 820	5 148 753	4 969 052	4 614 526	–17.4
Finland	70 369	69 171	68 487	70 429	66 344	–5.7
France	565 987	570 946	573 821	544 300	522 403	–7.7
Germany	1 247 901	1 042 071	999 776	981 112	919 698	–26.3
Greece	104 565	126 173	134 560	128 736	122 724	17.4
Hungary*[a]	114 114	76 824	79 532	73 156	66 784	–41.5
Iceland	3 441	3 790	3 757	4 910	4 649	35.1
Ireland	54 820	67 865	69 221	67 817	62 395	13.8
Italy	519 157	551 640	574 893	541 749	491 120	–5.4
Japan	1 266 553	1 341 800	1 351 329	1 280 620	1 209 213	–4.5
Latvia*	26 576	10 316	11 417	11 918	10 723	–59.7
Liechtenstein	230	255	271	263	247	7.8
Lithuania*	49 649	19 512	23 145	24 631	20 390	–58.9
Luxembourg	12 827	9 766	13 152	12 260	11 684	–8.9
Malta	2 065	2 614	2 927	3 009	2 866	38.8
Monaco	108	120	104	96	91	–15.7
Netherlands	211 852	213 161	211 105	204 601	198 872	–6.1
New Zealand	59 112	68 433	75 049	72 845	70 564	19.4
Norway	49 767	53 387	53 904	53 748	51 292	3.1
Poland*[a]	564 517	390 291	389 561	400 041	383 225	–32.1
Portugal	59 424	81 293	86 054	78 023	74 660	25.6
Romania*[a]	284 478	143 951	154 849	149 899	128 746	–54.7
Russian Federation*	3 369 295	2 054 650	2 135 498	2 243 478	2 127 354	–36.9
Slovakia*	74 147	49 279	50 113	48 195	43 393	–41.5
Slovenia*[a]	20 228	18 832	20 298	21 366	19 436	–3.9
Spain	283 168	379 563	433 847	404 771	367 548	29.8
Sweden	72 536	68 955	67 657	63 644	60 069	–17.2
Switzerland	53 122	51 952	54 190	53 443	51 949	–2.2
Turkey[c]	187 029	297 006	329 897	366 502	369 648	97.6
Ukraine*	933 283	400 394	430 821	432 179	374 120	–59.9
United Kingdom	779 387	673 477	654 627	624 083	570 066	–26.9
United States	6 166 812	7 076 343	7 184 959	7 027 912	6 608 227	7.2
Number of Parties showing decrease in emissions by more than 1 per cent:						*28*
Number of Parties showing change in emissions within 1 per cent:						*0*
Number of Parties showing increase in emissions by more than 1 per cent:						*14*

* A Party with an economy in transition.

[a] 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), Slovenia (1986)) are used for this Party instead of 1990 data.

[b] Emission estimates of the European Union are as reported for the EU-27 and are reported separately from those of its member States.

[c] 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_2, CH_4, N_2O, HFCs, PFCs and SF_6 including emissions/removals from land use, land-use change and forestry, 1990, 2000, 2005, 2008 and 2009

	Gg CO_2 equivalent					*Change from 1990*
Party	*1990*	*2000*	*2005*	*2008*	*2009*	*to 2009 (%)*
Australia	461 618	482 746	572 687	620 409	599 829	29.9
Austria	64 435	63 005	75 205	69 374	62 534	–3.0
Belarus*	110 605	48 271	57 972	63 468	57 843	–47.7
Belgium	141 788	144 256	141 080	133 599	122 840	–13.4
Bulgaria*[a]	110 369	53 075	55 779	57 467	47 715	–56.8
Canada	523 777	655 463	787 016	716 763	679 734	29.8
Croatia*	24 506	18 799	22 173	22 318	20 153	–17.8
Czech Republic*	192 818	140 571	138 700	137 025	126 740	–34.3
Denmark	72 546	72 197	68 686	63 035	61 204	–15.6
Estonia*	30 813	21 684	10 362	19 792	9 620	–68.8
European Union[b]	5 244 184	4 716 084	4 768 207	4 560 300	4 182 394	–20.2
Finland	55 330	48 234	40 823	43 418	25 786	–53.4
France	526 288	521 895	508 939	475 397	458 483	–12.9
Germany	1 216 727	1 009 687	1 015 537	996 328	937 262	–23.0
Greece	102 069	123 336	131 509	125 657	119 706	17.3
Hungary*[a]	111 953	76 460	75 311	69 223	63 765	–43.0
Iceland	4 544	4 720	4 561	5 624	5 326	17.2
Ireland	54 255	67 077	67 857	65 460	60 222	11.0
Italy	457 362	472 749	484 351	448 921	396 449	–13.3
Japan	1 196 976	1 254 511	1 261 056	1 202 302	1 137 690	–5.0
Latvia*	11 380	–3 984	–5 724	–10 825	–9 761	–185.8
Liechtenstein	221	252	265	257	241	9.0
Lithuania*	45 319	15 390	19 875	20 672	16 633	–63.3
Luxembourg	13 175	9 381	12 767	11 987	11 388	–13.6
Malta	2 008	2 556	2 868	2 948	2 806	39.7
Monaco	108	120	104	96	91	–15.8
Netherlands	214 544	215 736	213 792	207 269	201 347	–6.2
New Zealand	35 661	41 719	49 507	43 485	43 881	23.1
Norway	41 211	34 857	24 291	19 445	25 964	–37.0
Poland*[a]	553 856	377 568	363 406	365 183	346 049	–37.5
Portugal	50 098	67 732	79 839	64 569	60 566	20.9
Romania*[a]	262 755	113 971	125 714	123 026	104 178	–60.4
Russian Federation*	3 449 581	1 593 311	1 597 979	1 651 011	1 477 756	–57.2
Slovakia*	71 193	46 207	48 683	45 019	39 944	–43.9
Slovenia*[a]	12 541	11 580	11 839	12 883	10 978	–12.5
Spain	264 110	356 282	409 252	375 652	338 920	28.3
Sweden	27 814	27 979	31 413	29 765	18 430	–33.7
Switzerland	50 397	53 394	53 817	54 017	52 037	3.3
Turkey[c]	142 159	229 448	260 365	285 922	287 120	102.0
Ukraine*	863 361	351 612	394 581	414 933	354 875	–58.9
United Kingdom	783 308	673 900	651 669	620 121	565 987	–27.7
United States	5 320 257	6 536 083	6 157 077	6 020 660	5 618 165	5.6
Number of Parties showing decrease in emissions by more than 1 per cent:						*29*
Number of Parties showing change in emissions within 1 per cent:						*0*
Number of Parties showing increase in emissions by more than 1 per cent:						*13*

* A Party with an economy in transition.

[a] 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), Slovenia (1986)) are used for this Party instead of 1990 data.

[b] Emission estimates of the European Union are as reported for the EU-27 and are reported separately from those of its member States.

[c] 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_2 emissions excluding emissions/removals from land use, land-use change and forestry, 1990, 2000, 2005, 2008 and 2009

	Gg CO_2 equivalent					*Change from 1990*
Party	*1990*	*2000*	*2005*	*2008*	*2009*	*to 2009 (%)*
Australia	278 187	349 724	382 311	401 965	400 342	43.9
Austria	62 068	65 984	79 719	73 929	67 536	8.8
Belarus*	103 807	53 319	56 670	60 329	56 828	–45.3
Belgium	118 630	124 551	124 860	119 105	108 348	–8.7
Bulgaria*[a]	93 317	47 609	52 081	54 315	45 802	–50.9
Canada	459 593	564 504	574 811	578 346	542 998	18.1
Croatia*	23 090	19 919	23 371	23 626	21 755	–5.8
Czech Republic*	164 601	127 043	124 567	120 433	113 388	–31.1
Denmark	53 943	54 810	52 142	51 981	49 504	–8.2
Estonia*	36 452	15 082	16 333	17 295	14 096	–61.3
European Union[b]	4 395 680	4 110 794	4 241 006	4 092 066	3 764 995	–14.3
Finland	56 596	56 742	56 390	58 255	55 417	–2.1
France	396 046	412 341	424 364	394 917	377 755	–4.6
Germany	1 041 688	890 994	863 955	847 967	788 803	–24.3
Greece	83 307	103 217	113 384	110 113	104 336	25.2
Hungary*[a]	84 747	58 417	60 775	56 230	50 567	–40.3
Iceland	2 172	2 775	2 877	3 595	3 556	63.7
Ireland	32 381	44 654	47 709	47 537	42 414	31.0
Italy	435 895	463 670	490 119	466 004	417 212	–4.3
Japan	1 141 196	1 251 557	1 282 256	1 213 253	1 144 569	0.3
Latvia*	19 058	7 005	7 778	8 188	6 979	–63.4
Liechtenstein	203	228	240	230	214	5.5
Lithuania*	36 446	12 015	14 176	15 032	12 908	–64.6
Luxembourg	11 871	8 771	12 154	11 277	10 710	–9.8
Malta	1 847	2 321	2 612	2 653	2 511	35.9
Monaco	105	113	99	90	85	–19.0
Netherlands	159 269	169 965	176 190	175 308	169 823	6.6
New Zealand	25 000	31 125	35 806	35 686	33 445	33.8
Norway	34 803	41 740	43 281	44 418	42 843	23.1
Poland*[a]	471 736	320 926	318 164	325 058	313 722	–33.5
Portugal	43 702	63 740	67 717	59 461	56 155	28.5
Romania*[a]	193 283	96 757	106 225	103 506	86 180	–55.4
Russian Federation*	2 498 678	1 471 353	1 524 800	1 609 205	1 526 778	–38.9
Slovakia*	62 767	41 210	41 497	39 092	35 050	–44.2
Slovenia*[a]	16 287	15 177	16 639	17 920	16 019	–1.7
Spain	225 815	304 709	364 222	334 703	296 942	31.5
Sweden	56 646	53 913	53 187	49 876	46 621	–17.7
Switzerland	44 700	44 106	46 284	45 299	43 962	–1.7
Turkey[c]	141 362	225 432	259 605	297 124	299 106	111.6
Ukraine*	721 308	295 786	327 213	327 785	277 757	–61.5
United Kingdom	587 988	551 368	555 313	531 828	480 553	–18.3
United States	5 091 602	5 966 222	6 104 818	5 911 797	5 496 282	7.9
Number of Parties showing decrease in emissions by more than 1 per cent:						*26*
Number of Parties showing change in emissions within 1 per cent:						*1*
Number of Parties showing increase in emissions by more than 1 per cent:						*15*

[*] A Party with an economy in transition.

[a] 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), Slovenia (1986)) are used for this Party instead of 1990 data.

[b] Emission estimates of the European Union are as reported for the EU-27 and are reported separately from those of its member States.

[c] 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_2 emissions including emissions/removals from land use, land-use change and forestry, 1990, 2000, 2005, 2008 and 2009

	Gg CO_2 equivalent					*Change from 1990*
Party	*1990*	*2000*	*2005*	*2008*	*2009*	*to 2009 (%)*
Australia	314 496	332 017	421 378	466 506	449 875	43.0
Austria	48 288	48 474	62 003	56 294	49 962	3.5
Belarus*	75 207	22 387	30 438	33 168	26 752	–64.4
Belgium	117 073	123 392	123 210	117 549	106 748	–8.8
Bulgaria*[a]	79 012	36 959	40 577	42 567	33 849	–57.2
Canada	386 740	499 950	619 073	554 428	521 489	34.8
Croatia*	16 156	12 701	15 271	14 983	13 043	–19.3
Czech Republic*	160 839	119 387	117 748	115 490	106 385	–33.9
Denmark	57 079	57 704	55 718	49 853	48 372	–15.3
Estonia*	26 023	19 036	7 659	16 696	7 052	–72.9
European Union[b]	4 042 887	3 731 912	3 852 063	3 674 870	3 325 008	–17.8
Finland	41 435	35 676	28 590	31 083	14 713	–64.5
France	353 492	359 611	356 259	322 840	310 629	–12.1
Germany	1 009 739	857 842	878 950	862 410	805 959	–20.2
Greece	80 784	100 282	110 328	107 013	101 293	25.4
Hungary*[a]	82 547	57 989	56 482	52 241	47 495	–42.5
Iceland	3 201	3 623	3 600	4 227	4 152	29.7
Ireland	31 801	43 843	46 312	45 136	40 198	26.4
Italy	373 817	384 685	399 534	373 126	322 481	–13.7
Japan	1 071 520	1 164 227	1 191 957	1 134 902	1 073 029	0.1
Latvia*	3 623	–7 535	–9 571	–14 757	–13 701	–478.2
Liechtenstein	195	224	234	224	208	6.7
Lithuania*	32 094	7 871	10 883	11 051	9 128	–71.6
Luxembourg	12 216	8 383	11 766	11 002	10 411	–14.8
Malta	1 790	2 263	2 553	2 592	2 450	36.9
Monaco	105	113	99	90	85	–19.0
Netherlands	161 961	172 541	178 878	177 976	172 298	6.4
New Zealand	1 489	4 355	10 208	6 280	6 699	349.9
Norway	26 231	23 197	13 655	10 095	17 499	–33.3
Poland*[a]	458 866	305 952	289 693	287 856	274 205	–40.2
Portugal	34 290	50 101	61 400	45 950	42 000	22.5
Romania*[a]	171 560	66 776	77 078	76 610	61 588	–64.1
Russian Federation*	2 559 988	990 999	969 114	996 019	855 148	–66.6
Slovakia*	59 786	38 090	40 039	35 893	31 573	–47.2
Slovenia*[a]	8 598	7 917	8 171	9 433	7 553	–12.1
Spain	206 567	281 251	339 366	305 561	268 246	29.9
Sweden	11 843	12 861	16 840	15 857	4 852	–59.0
Switzerland	41 956	45 542	45 905	45 868	44 046	5.0
Turkey[c]	96 492	157 875	190 073	216 544	216 578	124.5
Ukraine*	651 367	246 991	290 958	310 488	258 484	–60.3
United Kingdom	591 091	550 983	551 641	527 180	475 807	–19.5
United States	4 238 184	5 398 403	5 057 291	4 880 982	4 490 130	5.9
Number of Parties showing decrease in emissions by more than 1 per cent:						*26*
Number of Parties showing change in emissions within 1 per cent:						*1*
Number of Parties showing increase in emissions by more than 1 per cent:						*15*

* A Party with an economy in transition.

[a] 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), Slovenia (1986)) are used for this Party instead of 1990 data.

[b] Emission estimates of the European Union are as reported for the EU-27 and are reported separately from those of its member States.

[c] 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_4 emissions excluding emissions/removals from land use, land-use change and forestry, 1990, 2000, 2005, 2008 and 2009

	Gg CO_2 equivalent					*Change from 1990*
Party	*1990*	*2000*	*2005*	*2008*	*2009*	*to 2009 (%)*
Australia	116 047	116 868	112 852	115 922	112 701	–2.9
Austria	8 304	6 620	6 101	5 725	5 666	–31.8
Belarus*	15 217	11 422	13 117	14 521	14 969	–1.6
Belgium	10 027	8 320	6 837	6 527	6 452	–35.7
Bulgaria*[a]	16 349	10 621	9 740	9 351	8 759	–46.4
Canada	71 988	94 551	98 743	95 397	92 299	28.2
Croatia*	3 461	2 679	3 070	3 446	3 463	0.0
Czech Republic*	18 465	12 088	11 676	11 562	11 125	–39.8
Denmark	5 714	5 883	5 752	5 858	5 864	2.6
Estonia*	2 824	1 668	1 670	1 617	1 401	–50.4
European Union[b]	605 757	489 050	439 913	423 282	413 291	–31.8
Finland	6 315	5 406	4 527	4 344	4 273	–32.3
France	66 918	68 800	65 947	66 385	65 514	–2.1
Germany	107 284	74 755	57 224	51 259	48 794	–54.5
Greece	9 802	9 993	9 234	8 862	8 809	–10.1
Hungary*[a]	12 197	9 567	8 987	8 554	8 385	–31.3
Iceland	463	462	449	484	478	3.4
Ireland	13 589	13 442	12 977	12 380	12 178	–10.4
Italy	43 524	45 649	40 986	38 105	37 297	–14.3
Japan	31 901	25 789	22 676	21 213	20 708	–35.1
Latvia*	3 760	1 913	1 989	1 970	1 944	–48.3
Liechtenstein	13	12	14	15	15	9.5
Lithuania*	6 370	3 400	3 647	3 730	3 623	–43.1
Luxembourg	467	472	455	449	448	–4.0
Malta	167	232	244	263	269	61.2
Monaco	0.66	0.81	0.63	0.60	0.57	–12.8
Netherlands	25 539	19 749	17 208	17 028	16 922	–33.7
New Zealand	25 304	27 307	27 553	26 005	26 136	3.3
Norway	4 666	4 723	4 425	4 297	4 260	–8.7
Poland*[a]	51 940	38 897	37 576	36 027	34 741	–33.1
Portugal	10 188	11 419	12 470	12 637	12 804	25.7
Romania*[a]	47 907	27 032	26 835	25 658	23 995	–49.9
Russian Federation*	609 553	445 519	484 711	503 781	475 801	–21.9
Slovakia*	4 814	4 446	4 592	4 696	4 351	–9.6
Slovenia*[a]	2 263	2 187	2 155	2 060	2 016	–10.9
Spain	26 318	33 547	35 347	36 062	36 387	38.3
Sweden	7 066	6 442	6 003	5 479	5 366	–24.1
Switzerland	4 697	3 919	3 782	3 871	3 823	–18.6
Turkey[c]	33 498	53 300	52 384	54 295	54 368	62.3
Ukraine*	151 004	77 606	76 549	73 665	68 330	–54.7
United Kingdom	110 582	66 944	48 823	44 673	43 808	–60.4
United States	671 658	645 570	621 636	664 783	678 449	1.0
Number of Parties showing decrease in emissions by more than 1 per cent:						*31*
Number of Parties showing change in emissions within 1 per cent:						*1*
Number of Parties showing increase in emissions by more than 1 per cent:						*10*

[*] A Party with an economy in transition.

[a] 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), Slovenia (1986)) are used for this Party instead of 1990 data.

[b] Emission estimates of the European Union are as reported for the EU-27 and are reported separately from those of its member States.

[c] 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_4 emissions including emissions/removals from land use, land-use change and forestry, 1990, 2000, 2005, 2008 and 2009

	Gg CO_2 equivalent					*Change from 1990*
Party	*1990*	*2000*	*2005*	*2008*	*2009*	*to 2009 (%)*
Australia	120 902	119 728	117 036	119 335	115 802	–4.2
Austria	8 305	6 620	6 101	5 725	5 666	–31.8
Belarus*	15 224	11 430	13 120	14 525	14 978	–1.6
Belgium	10 027	8 320	6 837	6 527	6 452	–35.7
Bulgaria*[a]	16 351	10 792	9 744	9 367	8 765	–46.4
Canada	75 305	96 062	104 463	99 698	98 105	30.3
Croatia*	3 461	2 679	3 070	3 446	3 463	0.0
Czech Republic*	18 565	12 180	11 789	11 706	11 246	–39.4
Denmark	5 714	5 883	5 752	5 858	5 864	2.6
Estonia*	2 827	1 682	1 671	1 761	1 405	–50.3
European Union[b]	609 737	494 251	444 641	427 895	417 789	–31.5
Finland	6 349	5 444	4 565	4 382	4 309	–32.1
France	68 108	70 948	67 768	68 103	67 243	–1.3
Germany	107 293	74 759	57 225	51 262	48 799	–54.5
Greece	9 827	10 082	9 239	8 881	8 832	–10.1
Hungary*[a]	12 228	9 598	9 023	8 578	8 408	–31.2
Iceland	464	469	456	492	487	4.8
Ireland	13 590	13 443	12 977	12 380	12 178	–10.4
Italy	43 671	45 733	41 024	38 152	37 352	–14.5
Japan	31 910	25 797	22 685	21 235	20 717	–35.1
Latvia*	3 779	1 972	2 024	1 998	1 978	–47.7
Liechtenstein	13	12	14	15	15	9.5
Lithuania*	6 370	3 401	3 647	3 730	3 624	–43.1
Luxembourg	467	472	455	449	448	–4.0
Malta	167	232	244	263	269	61.2
Monaco	0.66	0.81	0.63	0.60	0.57	–12.8
Netherlands	25 539	19 749	17 208	17 028	16 922	–33.7
New Zealand	25 354	27 354	27 600	26 045	26 191	3.3
Norway	4 667	4 723	4 425	4 303	4 262	–8.7
Poland*[a]	54 133	41 138	39 882	38 364	37 076	–31.5
Portugal	10 188	11 426	12 504	12 638	12 809	25.7
Romania*[a]	47 907	27 032	26 835	25 658	23 995	–49.9
Russian Federation*	619 736	455 695	494 492	514 951	487 693	–21.3
Slovakia*	4 828	4 458	4 614	4 717	4 372	–9.5
Slovenia*[a]	2 263	2 191	2 161	2 062	2 020	–10.8
Spain	26 491	33 707	35 583	36 084	36 449	37.6
Sweden	7 067	6 445	6 008	5 492	5 369	–24.0
Switzerland	4 705	3 920	3 782	3 872	3 823	–18.7
Turkey[c]	33 498	53 300	52 384	54 295	54 368	62.3
Ukraine*	151 013	77 609	76 554	73 698	68 345	–54.7
United Kingdom	110 608	66 977	48 847	44 708	43 837	–60.4
United States	674 858	659 887	631 441	676 723	686 271	1.7
Number of Parties showing decrease in emissions by more than 1 per cent:						*31*
Number of Parties showing change in emissions within 1 per cent:						*1*
Number of Parties showing increase in emissions by more than 1 per cent:						*10*

* A Party with an economy in transition.

[a] 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), Slovenia (1986)) are used for this Party instead of 1990 data.

[b] Emission estimates of the European Union are as reported for the EU-27 and are reported separately from those of its member States.

[c] 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_2O excluding emissions/removals from land use, land-use change and forestry, 1990, 2000, 2005, 2008 and 2009

	Gg CO_2 equivalent					*Change from 1990*
Party	*1990*	*2000*	*2005*	*2008*	*2009*	*to 2009 (%)*
Australia	18 944	26 609	26 505	26 802	26 132	37.9
Austria	6 199	6 290	5 436	5 692	5 417	–12.6
Belarus*	20 155	14 423	14 368	15 719	16 055	–20.3
Belgium	10 829	11 156	9 381	7 494	7 619	–29.6
Bulgaria*[a]	14 840	5 088	5 171	5 047	4 658	–68.6
Canada	48 987	48 170	49 904	51 545	47 189	–3.7
Croatia*	3 942	3 236	3 486	3 451	3 204	–18.7
Czech Republic*	13 304	8 572	8 454	8 471	7 971	–40.1
Denmark	9 689	7 900	6 347	6 396	6 087	–37.2
Estonia*	1 959	883	910	1 096	1 019	–48.0
European Union[b]	528 274	419 771	394 349	372 753	354 887	–32.8
Finland	7 363	6 458	6 662	6 785	5 715	–22.4
France	92 968	78 230	68 494	66 589	62 634	–32.6
Germany	87 068	64 230	64 162	66 594	66 493	–23.6
Greece	10 255	8 532	7 906	7 195	6 969	–32.0
Hungary*[a]	16 821	8 266	8 760	7 202	6 759	–59.8
Iceland	386	397	352	409	370	–4.0
Ireland	8 814	9 177	7 835	7 213	7 171	–18.6
Italy	37 246	39 497	37 568	29 490	27 822	–25.3
Japan	31 615	28 946	24 021	22 444	22 141	–30.0
Latvia*	3 759	1 392	1 609	1 659	1 691	–55.0
Liechtenstein	13	13	13	13	13	–0.5
Lithuania*	6 834	4 092	5 305	5 772	3 766	–44.9
Luxembourg	475	492	484	463	453	–4.7
Malta	44	53	47	45	43	–0.9
Monaco	1.75	3.41	3.14	3.03	2.91	66.4
Netherlands	20 130	17 663	15 708	9 939	9 722	–51.7
New Zealand	8 163	9 672	10 875	10 295	10 038	23.0
Norway	4 729	4 433	4 576	3 571	3 039	–35.7
Poland*[a]	40 625	29 330	29 384	31 146	27 559	–32.2
Portugal	5 534	5 825	5 080	4 879	4 586	–17.1
Romania*[a]	39 939	18 866	21 651	20 683	18 532	–53.6
Russian Federation*	219 772	108 651	104 239	111 206	111 061	–49.5
Slovakia*	6 294	3 522	3 815	4 088	3 655	–41.9
Slovenia*[a]	1 391	1 307	1 205	1 153	1 162	–16.4
Spain	27 682	32 318	28 296	26 257	26 209	–5.3
Sweden	8 336	7 701	7 264	7 068	7 032	–15.6
Switzerland	3 480	3 228	3 095	3 139	3 094	–11.1
Turkey[c]	11 566	16 617	14 182	11 571	12 531	8.3
Ukraine*	60 768	26 694	26 567	30 208	27 591	–54.6
United Kingdom	66 999	44 161	38 853	35 808	33 970	–49.3
United States	311 516	327 746	313 073	299 146	287 352	–7.8
Number of Parties showing decrease in emissions by more than 1 per cent:						*36*
Number of Parties showing change in emissions within 1 per cent:						*2*
Number of Parties showing increase in emissions by more than 1 per cent:						*4*

[*] A Party with an economy in transition.

[a] 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), Slovenia (1986)) are used for this Party instead of 1990 data.

[b] Emission estimates of the European Union are as reported for the EU-27 and are reported separately from those of its member States.

[c] 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_2O emissions including emissions/removals from land use, land-use change and forestry, 1990, 2000, 2005, 2008 and 2009

	Gg CO_2 equivalent					*Change from 1990*
Party	*1990*	*2000*	*2005*	*2008*	*2009*	*to 2009 (%)*
Australia	20 928	27 952	28 090	28 336	27 469	31.3
Austria	6 242	6 329	5 473	5 740	5 467	–12.4
Belarus*	20 173	14 444	14 385	15 737	16 079	–20.3
Belgium	10 829	11 156	9 381	7 494	7 619	–29.6
Bulgaria*[a]	15 003	5 290	5 334	5 214	4 822	–67.9
Canada	51 038	49 107	53 455	54 214	50 792	–0.5
Croatia*	3 942	3 236	3 486	3 451	3 204	–18.7
Czech Republic*	13 336	8 591	8 472	8 492	7 990	–40.1
Denmark	9 708	7 920	6 360	6 409	6 100	–37.2
Estonia*	1 962	893	912	1 202	1 022	–47.9
European Union[b]	532 473	423 717	398 018	376 584	358 244	–32.7
Finland	7 452	6 548	6 760	6 909	5 824	–21.8
France	94 634	79 761	69 895	68 045	64 110	–32.3
Germany	87 833	64 995	64 926	67 364	66 897	–23.8
Greece	10 257	8 541	7 906	7 197	6 971	–32.0
Hungary*[a]	16 828	8 299	8 796	7 233	6 789	–59.7
Iceland	458	470	425	482	443	–3.3
Ireland	8 828	9 199	7 867	7 255	7 213	–18.3
Italy	37 382	39 506	37 572	29 495	27 827	–25.6
Japan	31 706	28 979	24 036	22 455	22 150	–30.1
Latvia*	3 978	1 572	1 783	1 832	1 854	–53.4
Liechtenstein	13	13	13	13	13	–0.4
Lithuania*	6 854	4 113	5 328	5 795	3 788	–44.7
Luxembourg	478	495	487	466	455	–4.7
Malta	44	53	47	45	43	–0.9
Monaco	1.77	3.44	3.17	3.05	2.93	65.2
Netherlands	20 130	17 663	15 708	9 939	9 722	–51.7
New Zealand	8 173	9 680	10 882	10 302	10 046	22.9
Norway	4 742	4 446	4 589	3 584	3 052	–35.6
Poland*[a]	40 641	29 340	29 394	31 153	27 565	–32.2
Portugal	5 619	5 895	5 148	4 936	4 642	–17.4
Romania*[a]	39 939	18 868	21 663	20 707	18 555	–53.5
Russian Federation*	228 565	117 490	112 626	120 755	121 201	–47.0
Slovakia*	6 307	3 559	3 821	4 090	3 662	–41.9
Slovenia*[a]	1 393	1 311	1 208	1 156	1 166	–16.4
Spain	27 699	32 334	28 320	26 259	26 216	–5.4
Sweden	8 416	7 775	7 362	7 195	7 160	–14.9
Switzerland	3 492	3 234	3 100	3 144	3 098	–11.3
Turkey[c]	11 566	16 617	14 182	11 571	12 531	8.3
Ukraine*	60 778	26 704	26 577	30 226	27 604	–54.6
United Kingdom	67 793	44 936	39 544	36 459	34 607	–49.0
United States	315 179	340 987	322 913	310 770	295 620	–6.2
Number of Parties showing decrease in emissions by more than 1 per cent:						*35*
Number of Parties showing change in emissions within 1 per cent:						*3*
Number of Parties showing increase in emissions by more than 1 per cent:						*4*

[*] A Party with an economy in transition.

[a] 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), Slovenia (1986)) are used for this Party instead of 1990 data.

[b] Emission estimates of the European Union are as reported for the EU-27 and are reported separately from those of its member States.

[c] 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 HFCs, PFCs and SF_6, 1990, 2000, 2005, 2008 and 2009

	Gg CO_2 equivalent					*Change from 1990*
Party	*1990*	*2000*	*2005*	*2008*	*2009*	*to 2009 (%)*
Australia	5 292	3 049	6 182	6 232	6 683	26.3
Austria	1 600	1 582	1 628	1 614	1 440	–10.0
Belarus*		10	28	38	35	
Belgium	3 858	1 388	1 652	2 028	2 022	–47.6
Bulgaria*[a]	3	35	122	320	278	7 860.2
Canada	10 694	10 344	10 025	8 423	9 349	–12.6
Croatia*	948	183	347	437	443	–53.2
Czech Republic*	78	413	690	1 337	1 118	1 339.9
Denmark	44	690	855	916	868	1 851.7
Estonia*		73	120	133	142	
European Union[b]	59 087	66 205	73 485	80 950	81 352	37.7
Finland	94	566	908	1 045	939	894.5
France	10 054	11 575	15 016	16 409	16 501	64.1
Germany	11 861	12 091	14 436	15 292	15 607	31.6
Greece	1 202	4 430	4 037	2 567	2 610	117.2
Hungary*[a]	350	573	1 011	1 170	1 073	206.9
Iceland	421	157	79	422	245	–41.8
Ireland	36	592	700	688	632	1 645.7
Italy	2 492	2 824	6 220	8 149	8 788	252.7
Japan	61 840	35 508	22 376	23 710	21 794	–64.8
Latvia*		6	40	101	108	
Liechtenstein	0.00	2.41	4.68	5.51	5.53	–
Lithuania*		5	17	97	93	
Luxembourg	15	31	58	70	73	400.3
Malta	8	9	25	48	43	474.0
Monaco	0.16	2.69	1.91	1.95	2.12	1 217.1
Netherlands	6 914	5 783	1 999	2 326	2 404	–65.2
New Zealand	645	329	816	858	945	46.5
Norway	5 570	2 491	1 622	1 462	1 151	–79.3
Poland*[a]	216	1 138	4 437	7 810	7 203	3 235.0
Portugal		309	787	1 046	1 116	
Romania*[a]	3 350	1 296	138	52	40	–98.8
Russian Federation*	41 293	29 127	21 747	19 286	13 714	–66.8
Slovakia*	271	101	209	319	337	24.1
Slovenia*[a]	287	161	300	233	239	–16.6
Spain	3 353	8 990	5 983	7 749	8 009	138.9
Sweden	488	899	1 203	1 221	1 049	115.0
Switzerland	244	698	1 029	1 134	1 070	338.9
Turkey[c]	603	1 656	3 725	3 513	3 643	503.7
Ukraine*	203	307	492	521	442	117.3
United Kingdom	13 817	11 004	11 637	11 774	11 736	–15.1
United States	92 037	136 805	145 432	152 186	146 144	58.8
Number of Parties showing decrease in emissions by more than 1 per cent:						*12*
Number of Parties showing change in emissions within 1 per cent:						*0*
Number of Parties showing increase in emissions by more than 1 per cent:						*25*

* A Party with an economy in transition.

[a] 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), Slovenia (1986)) are used for this Party instead of 1990 data.

[b] Emission estimates of the European Union are as reported for the EU-27 and are reported separately from those of its member States.

[c] 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_2 emissions and removals from land use, land-use change and forestry, 1990, 2000, 2005, 2008 and 2009

	Gg CO_2 equivalent					*Change from 1990*
Party	*1990*	*2000*	*2005*	*2008*	*2009*	*to 2009 (%)*
Australia	36 309	–17 707	39 067	64 541	49 533	36.4
Austria	–13 780	–17 510	–17 716	–17 635	–17 574	27.5
Belarus*	–28 599	–30 932	–26 231	–27 161	–30 076	5.2
Belgium	–1 557	–1 159	–1 650	–1 556	–1 600	2.8
Bulgaria*[a]	–14 305	–10 649	–11 504	–11 748	–11 953	–16.4
Canada	–72 853	–64 554	44 261	–23 919	–21 509	–70.5
Croatia*	–6 934	–7 218	–8 100	–8 643	–8 712	25.7
Czech Republic*	–3 761	–7 657	–6 819	–4 943	–7 003	86.2
Denmark	3 136	2 895	3 576	–2 128	–1 131	–136.1
Estonia*	–10 428	3 954	–8 673	–599	–7 043	–32.5
European Union[b]	–352 793	–378 882	–388 943	–417 197	–439 987	24.7
Finland	–15 161	–21 065	–27 800	–27 172	–40 704	168.5
France	–42 554	–52 730	–68 104	–72 077	–67 126	57.7
Germany	–31 949	–33 152	14 995	14 443	17 155	–153.7
Greece	–2 524	–2 935	–3 057	–3 100	–3 043	20.6
Hungary*[a]	–2 199	–428	–4 293	–3 988	–3 072	39.7
Iceland	1 029	849	723	633	596	–42.0
Ireland	–580	–811	–1 397	–2 400	–2 216	281.8
Italy	–62 077	–78 984	–90 585	–92 879	–94 731	52.6
Japan	–69 676	–87 330	–90 298	–78 351	–71 541	2.7
Latvia*	–15 435	–14 540	–17 349	–22 945	–20 681	34.0
Liechtenstein	–8.22	–3.43	–6.06	–6.12	–6.15	–25.2
Lithuania*	–4 351	–4 143	–3 293	–3 981	–3 781	–13.1
Luxembourg	345	–388	–388	–275	–299	–186.7
Malta	–57	–58	–59	–61	–61	6.7
Monaco	–0.03	–0.04	–0.04	–0.04	–0.04	13.7
Netherlands	2 692	2 576	2 687	2 668	2 475	–8.1
New Zealand	–23 511	–26 770	–25 598	–29 406	–26 745	13.8
Norway	–8 572	–18 543	–29 626	–34 322	–25 344	195.7
Poland*[a]	–12 870	–14 974	–28 471	–37 201	–39 517	207.1
Portugal	–9 412	–13 639	–6 317	–13 512	–14 155	50.4
Romania*[a]	–21 723	–29 981	–29 147	–26 896	–24 592	13.2
Russian Federation*	61 310	–480 354	–555 686	–613 186	–671 630	–1 195.5
Slovakia*	–2 981	–3 120	–1 457	–3 199	–3 477	16.6
Slovenia*[a]	–7 690	–7 260	–8 468	–8 487	–8 465	10.1
Spain	–19 249	–23 458	–24 856	–29 142	–28 696	49.1
Sweden	–44 804	–41 053	–36 347	–34 019	–41 769	–6.8
Switzerland	–2 745	1 436	–378	569	84	–103.1
Turkey[c]	–44 871	–67 558	–69 533	–80 580	–82 528	83.9
Ukraine*	–69 941	–48 795	–36 255	–17 297	–19 273	–72.4
United Kingdom	3 102	–385	–3 672	–4 648	–4 746	–253.0
United States	–853 417	–567 819	–1 047 527	–1 030 815	–1 006 152	17.9
Number of Parties showing decrease in emissions by more than 1 per cent:						*15*
Number of Parties showing change in emissions within 1 per cent:						*0*
Number of Parties showing increase in emissions by more than 1 per cent:						*27*

[*] A Party with an economy in transition.

[a] 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), Slovenia (1986)) are used for this Party instead of 1990 data.

[b] Emission estimates of the European Union are as reported for the EU-27 and are reported separately from those of its member States.

[c] 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_4 emissions from land use, land-use change and forestry, 1990, 2000, 2005, 2008 and 2009

	Gg CO_2 equivalent					*Change from 1990*
Party	*1990*	*2000*	*2005*	*2008*	*2009*	*to 2009 (%)*
Australia	4 855	2 860	4 185	3 413	3 101	–36.1
Austria	0.58	0.12	0.09	0.15	0.16	–72.0
Belarus*	7.08	8.16	3.77	4.67	9.31	31.5
Belgium						
Bulgaria*[a]	1.36	170.98	4.27	16.06	6.70	391.5
Canada	3 317	1 510	5 720	4 301	5 806	75.0
Croatia*	0.01	0.05	0.00	0.00	0.00	–84.7
Czech Republic*	100	92	113	144	121	21.4
Denmark						
Estonia*	3.43	14.02	1.68	143.70	3.59	4.6
European Union[b]	3 980	5 200	4 728	4 613	4 499	13.0
Finland	34	38	39	38	37	7.3
France	1 189	2 147	1 821	1 718	1 729	45.4
Germany	9.08	3.42	1.10	3.28	4.62	–49.2
Greece	25	89	5	19	23	–9.7
Hungary*[a]	31	31	36	24	23	–24.5
Iceland	1.60	7.80	7.80	8.22	8.33	420.7
Ireland	1.12	0.93	0.55	0.77	0.39	–64.9
Italy	146	85	39	46	55	–62.5
Japan	8.31	7.75	9.14	21.65	8.73	5.0
Latvia*	19	59	35	28	34	77.2
Liechtenstein						
Lithuania*	0.17	0.41	0.06	0.14	0.40	135.3
Luxembourg						
Malta						
Monaco						
Netherlands						
New Zealand	50	46	47	40	55	9.9
Norway	1.77	0.33	0.65	6.00	2.51	41.9
Poland*[a]	2 192	2 241	2 306	2 336	2 335	6.5
Portugal	0.80	6.88	33.35	0.98	4.78	495.2
Romania*[a]	0.00	0.07	0.00	0.02	0.02	2 113.6
Russian Federation*	10 183	10 176	9 780	11 170	11 892	16.8
Slovakia*	14	12	22	21	21	47.4
Slovenia*[a]		4.55	5.32	1.52	3.63	
Spain	173	160	236	22	62	–64.2
Sweden	1.72	2.95	4.99	13.27	2.63	52.6
Switzerland	8.19	0.27	0.35	0.27	0.31	–96.2
Turkey[c]	0.04	0.07	0.00	0.12	0.02	–54.9
Ukraine*	8.39	3.44	5.25	33.60	15.13	80.4
United Kingdom	26	33	24	35	30	14.1
United States	3 200	14 318	9 805	11 940	7 822	144.4
Number of Parties showing decrease in emissions by more than 1 per cent:						*11*
Number of Parties showing change in emissions within 1 per cent:						*0*
Number of Parties showing increase in emissions by more than 1 per cent:						*23*

* A Party with an economy in transition.

[a] 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), Slovenia (1986)) are used for this Party instead of 1990 data.

[b] Emission estimates of the European Union are as reported for the EU-27 and are reported separately from those of its member States.

[c] 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_2O emissions from land use, land-use change and forestry, 1990, 2000, 2005, 2008 and 2009

	Gg CO_2 equivalent					*Change from 1990*
Party	*1990*	*2000*	*2005*	*2008*	*2009*	*to 2009 (%)*
Australia	1 984	1 342	1 585	1 534	1 337	–32.6
Austria	44	39	37	48	49	12.9
Belarus*	18	21	18	18	23	29.8
Belgium						
Bulgaria*[a]	163	202	164	166	164	0.7
Canada	2 051	937	3 551	2 670	3 603	75.7
Croatia*	0.00	0.01	0.00	0.00	0.00	–84.7
Czech Republic*	31	19	19	21	19	–39.9
Denmark	19	20	13	13	13	–33.7
Estonia*	2.69	10.35	2.08	105.39	3.01	11.6
European Union[b]	4 199	3 945	3 669	3 831	3 356	–20.1
Finland	89	90	98	124	109	22.2
France	1 666	1 531	1 402	1 456	1 476	–11.4
Germany	765	765	764	770	403	–47.3
Greece	2.53	9.05	0.48	1.93	2.29	–9.7
Hungary*[a]	7	33	36	32	30	335.6
Iceland	73	73	73	73	73	0.4
Ireland	14	22	32	42	42	196.9
Italy	136.03	8.58	3.91	4.69	5.57	–95.9
Japan	91	33	16	11	8	–90.7
Latvia*	219	181	174	173	163	–25.8
Liechtenstein		0.19	0.01	0.00	0.00	
Lithuania*	20	21	22	23	23	11.2
Luxembourg	2.85	2.82	2.70	2.62	2.59	–8.9
Malta						
Monaco	0.02	0.02	0.03	0.02	0.01	–37.1
Netherlands						
New Zealand	9.95	8.44	7.48	6.41	7.70	–22.6
Norway	14	13	13	13	13	–4.8
Poland*[a]	15.72	9.98	9.70	7.10	6.47	–58.9
Portugal	86	71	68	56	56	–34.9
Romania*[a]	0	1	12	24	24	–
Russian Federation*	8 794	8 839	8 387	9 550	10 140	15.3
Slovakia*	12.09	37.29	5.34	1.84	7.04	–41.8
Slovenia*[a]	2.69	3.51	3.65	2.97	3.35	24.3
Spain	18	16	24	2	6	–64.2
Sweden	79	74	98	127	128	61.6
Switzerland	11.45	5.36	4.79	4.50	4.39	–61.7
Turkey[c]	0.00	0.01	0.00	0.01	0.00	–54.0
Ukraine*	10	10	11	18	13	27.0
United Kingdom	793	775	690	650	638	–19.7
United States	3 663	13 242	9 840	11 624	8 269	125.8
Number of Parties showing decrease in emissions by more than 1 per cent:						*22*
Number of Parties showing change in emissions within 1 per cent:						*2*
Number of Parties showing increase in emissions by more than 1 per cent:						*14*

* A Party with an economy in transition.

[a] 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), Slovenia (1986)) are used for this Party instead of 1990 data.

[b] Emission estimates of the European Union are as reported for the EU-27 and are reported separately from those of its member States.

[c] 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.