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## **Subsidiary Body for Implementation**

**Thirty-ninth session**

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Item 3(b) of the provisional agenda

**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 1990–2011**

## **National greenhouse gas inventory data for the period 1990–2011**

### **Note by the secretariat\***

#### *Summary*

All 43 Parties included in Annex I to the Convention (Annex I Parties) submitted their greenhouse gas (GHG) inventory common reporting format (CRF) tables and national inventory reports (NIRs) in 2013. By the deadline of 15 April, 41 sets of CRF tables and 40 NIRs had been received. Over the period 1990–2011, total aggregate GHG emissions excluding emissions and removals from land use, land-use change and forestry (LULUCF) for all Annex I Parties decreased by 9.3 per cent, while total GHG emissions and removals including LULUCF decreased by 14.5 per cent. For Annex I Parties with economies in transition (Annex I EIT Parties), GHG emissions excluding and including LULUCF decreased by 36.8 per cent and 49.1 per cent, respectively. For Annex I non-EIT Parties, GHG emissions excluding and including LULUCF increased by 3.2 per cent and 2.1 per cent, respectively. The information in this document is based on information in the national GHG inventory submissions of Annex I Parties received as at 5 October 2013. At the time of the publication of this document, the annual review process for GHG inventories from Annex I Parties was still ongoing therefore the data included in this document may not reflect the latest information provided by Parties. The latest inventory data are available on the UNFCCC website.

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\* This document was submitted after the due date in order to take into account the latest submissions from Parties.

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## **I. Introduction**

### **A. Mandate**

1. The Conference of the Parties (COP), by decisions 9/CP.2, 3/CP.5 and 18/CP.8, requested Parties included in Annex I to the Convention (Annex I Parties) to 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 was requested<sup>1</sup> 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. This document shows the status of reporting of GHG inventories by Annex I Parties in 2013 (chapter II) and provides a summary of the latest available data on GHG emissions and removals for the period 1990–2011 (chapter III). Data are provided for carbon dioxide (CO<sub>2</sub>), methane (CH<sub>4</sub>) and nitrous oxide (N<sub>2</sub>O), as well as for hydrofluorocarbons (HFCs), perfluorocarbons (PFCs) and sulphur hexafluoride (SF<sub>6</sub>) taken together. Data are also provided on total<sup>2</sup> aggregate<sup>3</sup> GHG emissions, both including and excluding net GHG emissions and removals from land use, land-use change and forestry (LULUCF).

3. The information provided in this document is based on information in the national GHG inventories received from all 43 Annex I Parties as at 5 October 2013. It includes data from Cyprus, which submitted its national GHG inventory as an Annex I Party<sup>4</sup> for the first time in 2013.

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

### **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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<sup>1</sup> FCCC/CP/2002/8, annex II, paragraphs 42 and 43.

<sup>2</sup> The term “total” implies that emissions from the sectors of the common reporting format are summed; the inclusion of emissions from land use, land-use change and forestry in the sum is indicated separately.

<sup>3</sup> The term “aggregate” implies that GHG emissions and removals are calculated as a weighted sum of CO<sub>2</sub>, CH<sub>4</sub>, N<sub>2</sub>O, HFCs, PFCs and SF<sub>6</sub> using the global warming potentials agreed under the Convention.

<sup>4</sup> In accordance with decision 10/CP.17 and following the notification from the United Nations Depository, Cyprus became an Annex I Party under the Convention on 9 January 2013.

<sup>5</sup> <[http://unfccc.int/national\\_reports/annex\\_i\\_ghg\\_inventories/national\\_inventories\\_submissions/items/7383.php](http://unfccc.int/national_reports/annex_i_ghg_inventories/national_inventories_submissions/items/7383.php)>.

## II. Status of reporting

### A. Timeliness and completeness of submissions

6. In accordance with the UNFCCC Annex I reporting guidelines on annual inventories,<sup>6</sup> 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 2013, all 43 Annex I Parties provided GHG data for all years from 1990<sup>7</sup> to 2011.

7. By the due date of 15 April, 41 sets of CRF tables and 40 NIRs had been received and, within six weeks of that deadline, all Parties had submitted their CRF tables and NIRs. The dates of the initial submission of the CRF tables are shown in table 1.

Table 1  
Greenhouse gas inventory submissions from Annex I Parties in 2013

<i>Party</i>	<i>CRF submission date<sup>a</sup></i>	<i>Party</i>	<i>CRF submission date<sup>a</sup></i>
Australia	15 April 2013	Liechtenstein	15 April 2013
Austria	15 April 2013	Lithuania	15 April 2013
Belarus	<i>18 April 2013</i>	Luxembourg	15 April 2013
Belgium	15 April 2013	Malta	12 April 2013
Bulgaria	15 April 2013	Monaco	9 April 2013
Canada	15 April 2013	Netherlands	15 April 2013
Croatia	15 April 2013	New Zealand	12 April 2013
Cyprus	11 April 2013	Norway	12 April 2013
Czech Republic	15 April 2013	Poland	12 April 2013
Denmark	15 April 2013	Portugal	15 April 2013
Estonia	15 April 2013	Romania	12 April 2013
European Union	15 April 2013	Russian Federation	13 April 2013
Finland	15 April 2013	Slovakia	15 April 2013
France	9 April 2013	Slovenia	11 April 2013
Germany	11 April 2013	Spain	15 April 2013
Greece	15 April 2013	Sweden	12 April 2013
Hungary	15 April 2013	Switzerland	15 April 2013
Iceland	15 April 2013	Turkey	12 April 2013
Ireland	15 April 2013	Ukraine	15 April 2013
Italy	<i>16 April 2013</i>	United Kingdom	15 April 2013
Japan	12 April 2013	United States	12 April 2013
Latvia	15 April 2013		

*Abbreviation:* CRF = common reporting format.

<sup>a</sup> Dates after the submission deadline of 15 April 2013 are shown in italics. The dates of submission of the national inventory report may be different.

<sup>6</sup> “Updated UNFCCC reporting guidelines on annual inventories following incorporation of the provisions of decision 14/CP.11” (FCCC/SBSTA/2006/9).

<sup>7</sup> Unless otherwise specified, base year data are used instead of 1990 data. The Parties that may use a base year other than 1990, as stipulated in decisions 9/CP.2 and 11/CP.4, provided data for their respective base years. Such 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, 14 Parties submitted revised versions of their CRF tables, and also 14 Parties resubmitted their NIRs.

## B. Recalculations

9. In accordance with the UNFCCC Annex I reporting guidelines on annual inventories, Parties should, when necessary, conduct recalculations in order to improve the quality of their emission estimates and to ensure the consistency of the time series.

10. In 2013, the recalculations resulting from changes in the activity data, emission factors and methodologies used had a varied impact on the GHG emissions for 1990 of all Annex I Parties (see table 2). For total aggregate GHG emissions excluding LULUCF, the change was less than 1 per cent for 34 Parties and more than 2 per cent for three Parties. For total aggregate GHG emissions including LULUCF, the change was less than 1 per cent for 19 Parties and more than 3 per cent for 11 Parties.

Table 2  
**Inventory recalculations by Annex I Parties in 2013**

<i>Party</i>	<i>Impact on GHG emissions for 1990 excluding LULUCF (%)</i>	<i>Impact on GHG emissions for 1990 including LULUCF (%)</i>
Australia	-0.06	2.55
Austria	-0.01	0.13
Belarus	-0.02	-0.03
Belgium	-0.24	-0.003
Bulgaria	-5.15	-5.93
Canada	0.30	1.46
Croatia	-0.22	-3.40
Cyprus	-	-
Czech Republic	-0.14	-0.15
Denmark	0.17	1.57
Estonia	-0.44	1.02
European Union	-0.16	0.42
Finland	0.12	1.18
France	-0.46	-1.11
Germany	0.33	-0.32
Greece	-0.38	-0.34
Hungary	1.41	1.06
Iceland	0.19	-0.22
Ireland	0.15	-5.02
Italy	-0.05	4.55
Japan	-0.003	0.04
Latvia	-1.10	-62.18
Liechtenstein	-0.14	-0.70
Lithuania	-2.36	1.89
Luxembourg	0.39	0.38
Malta	-1.44	-1.46
Monaco	0.01	0.01
Netherlands	-0.08	-0.08

<i>Party</i>	<i>Impact on GHG emissions for 1990 excluding LULUCF (%)</i>	<i>Impact on GHG emissions for 1990 including LULUCF (%)</i>
New Zealand	-0.08	-2.39
Norway	1.12	-14.86
Poland	-0.54	0.56
Portugal	1.35	30.41
Romania	-5.86	-6.35
Russian Federation	0.07	0.19
Slovakia	-0.04	0.40
Slovenia	-0.09	-12.73
Spain	-0.01	-0.01
Sweden	-0.07	12.74
Switzerland	-0.02	1.39
Turkey	0.75	32.53
Ukraine	0.03	0.04
United Kingdom	-0.10	-0.08
United States	0.13	1.80

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

11. Table 3 presents a comparison of the estimates of total aggregate GHG emissions in 1990 reported in document FCCC/SBI/2012/31, containing information from Annex I Parties' 2012 GHG inventory submissions, and those reported in the present document on the basis of information in those Parties' 2013 submissions.

Table 3

**Comparison of estimates reported in 2012 and 2013 of total aggregate greenhouse gas emissions of Annex I Parties in 1990**

	<i>2012</i>	<i>2013</i>	<i>Explanation of the difference between the estimates reported in 2012 and 2013</i>
<b>Total aggregate GHG emissions excluding LULUCF (thousands of Tg CO<sub>2</sub> eq)</b>			
All Annex I Parties	19.00	19.00	Aggregate impacts of inventory recalculations by individual Annex I Parties
Annex I EIT Parties	5.95	5.93	Inventory recalculations, for example, in Bulgaria, Lithuania and Romania
Annex I non-EIT Parties	13.05	13.07	Inventory recalculations, for example, in Germany, Norway and Portugal
<b>Total aggregate GHG emissions including LULUCF (thousands of Tg CO<sub>2</sub> eq)</b>			
All Annex I Parties	17.70	17.87	Aggregate impacts of inventory recalculations by individual Annex I Parties
Annex I EIT Parties	5.83	5.81	Inventory recalculations, for example, in Bulgaria, Latvia and Romania
Annex I non-EIT Parties	11.87	12.07	Inventory recalculations, for example, in Australia, Italy and Turkey

*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

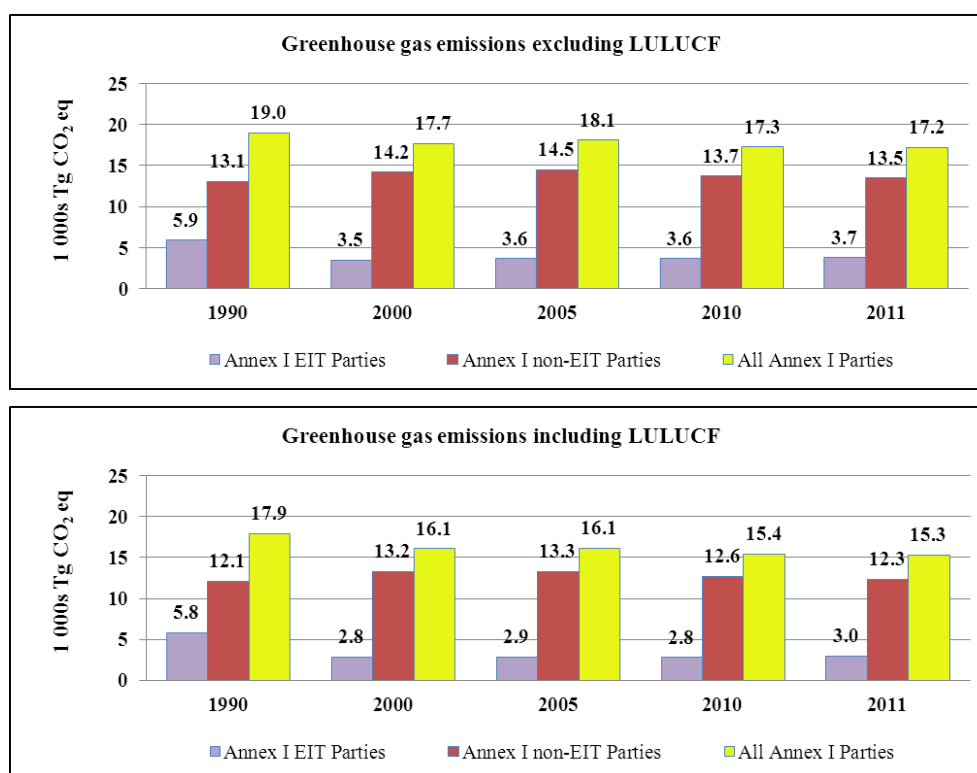
#### A. Total aggregate greenhouse gas emissions

12. Figures 1 and 2 show the trends in total aggregate GHG emissions from 1990 to 2011 for all Annex I Parties taken together, for Annex I Parties with economies in transition (Annex I EIT Parties) and for Annex I non-EIT Parties.

13. From 1990 to 2011, total aggregate GHG emissions excluding emissions and removals from LULUCF for all Annex I Parties decreased by 9.3 per cent, from 19,000.9 Tg<sup>8</sup> CO<sub>2</sub> eq to 17,230.7 Tg CO<sub>2</sub> eq. Total aggregate GHG emissions including LULUCF decreased by 14.5 per cent, from 17,874.8 Tg CO<sub>2</sub> eq to 15,284.2 Tg CO<sub>2</sub> eq. Compared with those in 2000, GHG emissions in 2011 showed a decrease of 2.7 per cent excluding LULUCF and of 4.8 per cent including LULUCF. Between 2010 and 2011, GHG emissions excluding and including LULUCF decreased by 0.5 per cent and 0.9 per cent, respectively.

Figure 1

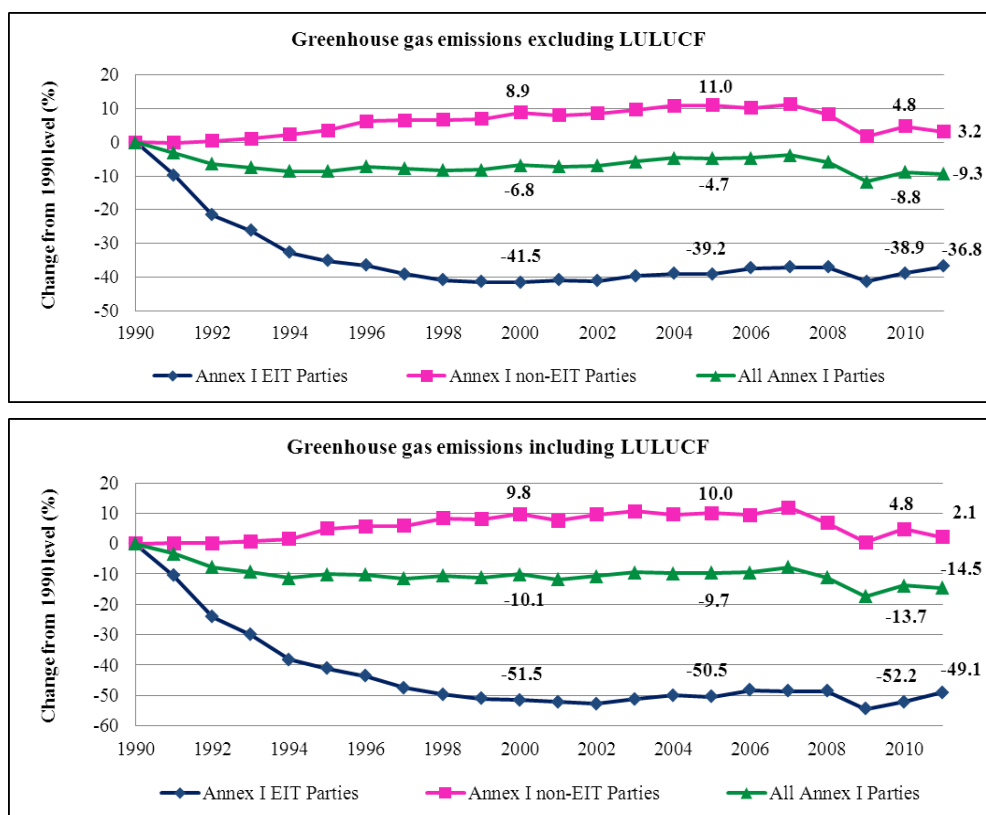
Greenhouse gas emissions from Annex I Parties, 1990, 2000, 2005, 2010 and 2011



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

<sup>8</sup> One teragram (Tg) equals one million tonnes.

Figure 2  
**Changes in greenhouse gas emissions from Annex I Parties, 1990–2011**



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

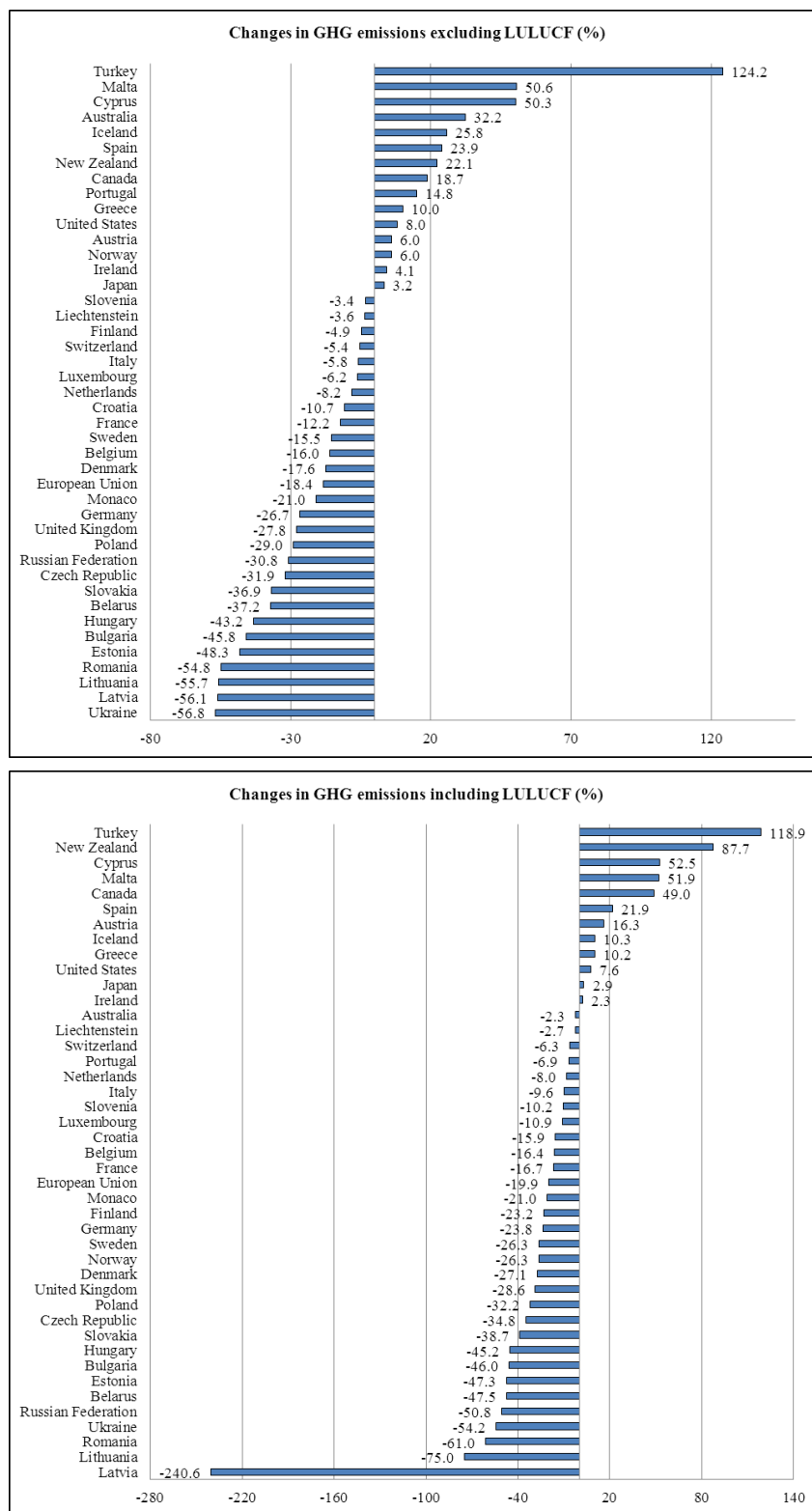
14. For Annex I EIT Parties, GHG emissions excluding and including LULUCF over the period 1990–2011 decreased by 36.8 per cent and 49.1 per cent, respectively. From 2000 to 2011, GHG emissions excluding and including LULUCF increased by 8.1 per cent and 5.0 per cent, respectively. Between 2010 and 2011, emissions increased by 3.4 per cent (excluding LULUCF) and by 6.5 per cent (including LULUCF).

15. For Annex I non-EIT Parties, from 1990 to 2011 GHG emissions increased by 3.2 per cent excluding LULUCF and by 2.1 per cent including LULUCF. From 2000 to 2011, GHG emissions decreased by 5.3 per cent excluding LULUCF and by 6.9 per cent including LULUCF. Compared with those in 2010, GHG emissions in 2011 showed a decrease of 1.6 per cent excluding LULUCF and of 2.5 per cent including LULUCF.

16. The changes in total aggregate GHG emissions over the period 1990–2011 varied considerably among Parties (see figure 3). The largest decrease in emissions excluding LULUCF was in Ukraine (by 56.8 per cent); while the largest decrease in emissions including LULUCF was in Latvia (by 240.6 per cent). On the other hand, the greatest increase in emissions both excluding LULUCF (by 124.2 per cent) and including LULUCF (by 118.9 per cent) occurred in Turkey.



Figure 3  
**Changes in total aggregate emissions of individual Annex I Parties, 1990–2011**



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

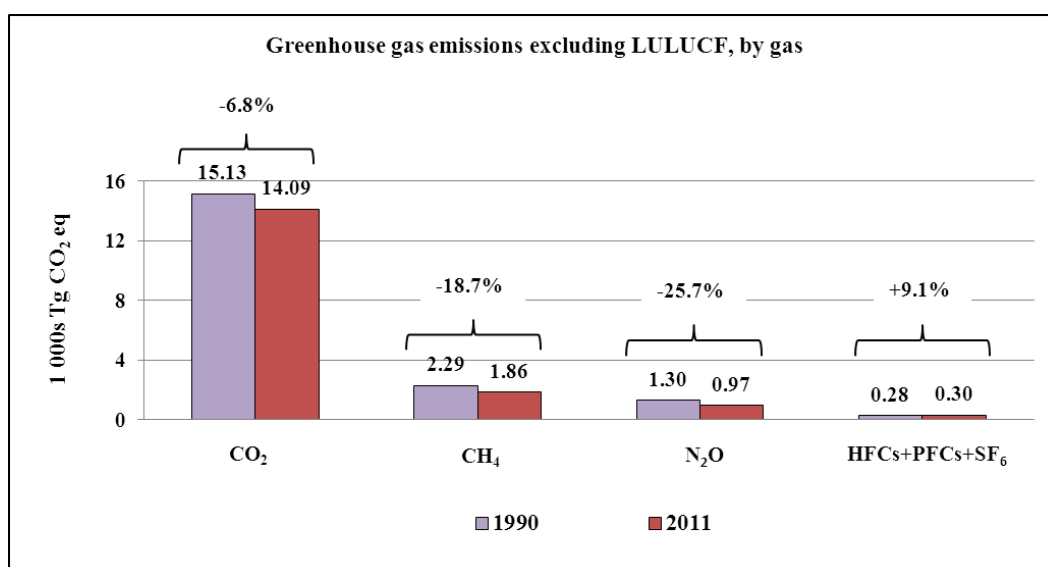
## B. Greenhouse gas emissions by gas

17. Throughout the period 1990–2011, CO<sub>2</sub> accounted for the largest share of total emissions, contributing 79.6 per cent in 1990 and 81.8 per cent in 2011. CH<sub>4</sub> was the second-highest contributor to total emissions (12.1 per cent in 1990 and 10.8 per cent in 2011), followed by N<sub>2</sub>O (6.9 per cent in 1990 and 5.6 per cent in 2011). The emissions of HFCs, PFCs and SF<sub>6</sub> taken together contributed less than 2.0 per cent of total emissions in both years.

18. Figure 4 illustrates the share of each GHG in the total emissions excluding LULUCF for 1990 and 2011, and the changes in the total emissions of each GHG over the period 1990–2011. Emissions of CO<sub>2</sub>, CH<sub>4</sub> and N<sub>2</sub>O decreased, while emissions of HFCs, PFCs and SF<sub>6</sub> taken together increased by 9.1 per cent.

Figure 4

**Greenhouse gas emissions excluding LULUCF from Annex I Parties by gas, 1990 and 2011**



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

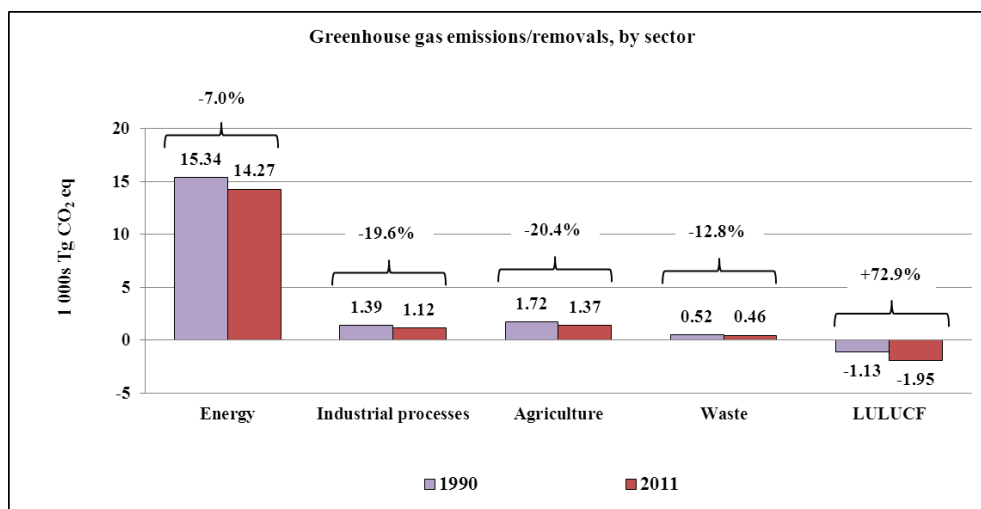
19. Between 2010 and 2011, emissions of CO<sub>2</sub> and CH<sub>4</sub> decreased by 0.8 per cent and 0.3 per cent, respectively, while N<sub>2</sub>O emissions increased by 1.1 per cent. Emissions of HFCs, PFCs and SF<sub>6</sub> taken together increased by 4.3 per cent.

## C. Greenhouse gas emissions by sector

20. From 1990 to 2011, emissions from all sectors decreased (see figure 5). The agriculture sector experienced the largest decrease in emissions (by 20.4 per cent), followed by industrial processes, waste and energy. Over the same period, net GHG removals from LULUCF increased by 72.9 per cent, from -1,126.1 Tg CO<sub>2</sub> eq to -1,946.5 Tg CO<sub>2</sub> eq.

21. Between 2010 and 2011, emissions from the energy and waste sectors decreased by 0.9 per cent and 1.0 per cent, respectively. Emissions from the industrial processes and agriculture sectors increased by 2.8 per cent and 0.6 per cent, respectively. Net GHG removals from LULUCF increased by 2.4 per cent.

Figure 5  
Greenhouse gas emissions and removals from Annex I Parties by sector, 1990 and 2011<sup>a</sup>

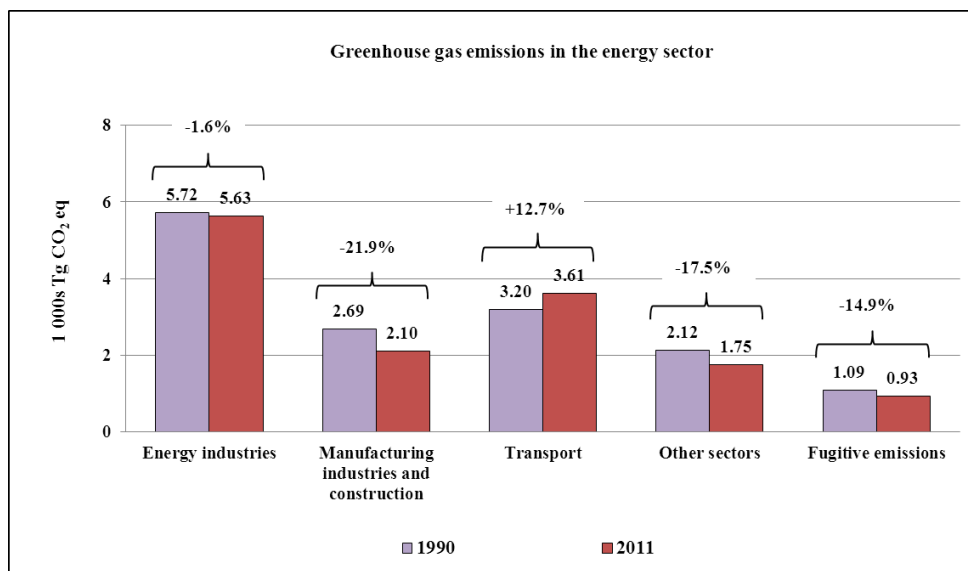


Abbreviation: LULUCF = land use, land-use change and forestry.

<sup>a</sup> The solvent and other product use sector is not included in this figure because its contribution to the total emissions is very small. Emissions from the sector decreased by 32.1 per cent from 1990 to 2011.

22. Within the energy sector, emissions decreased in all subsectors from 1990 to 2011, except transport, where emissions increased by 12.7 per cent (see figure 6). The largest emission reduction occurred in manufacturing industries and construction (by 21.9 per cent).

Figure 6  
Greenhouse gas emissions from Annex I Parties in the energy sector, 1990 and 2011

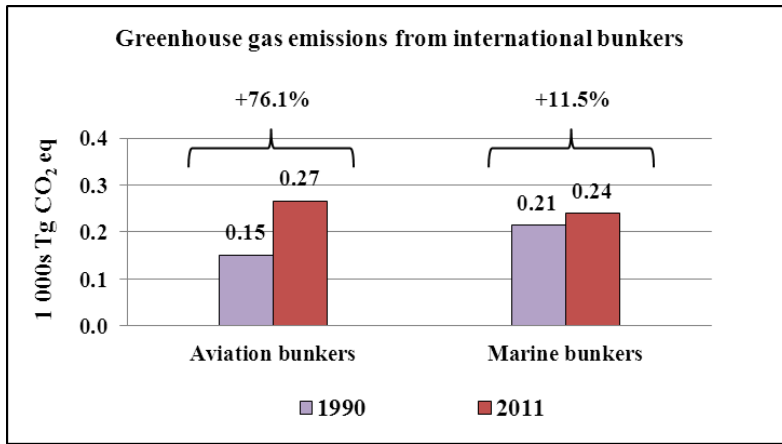


23. Between 2010 and 2011, emissions from energy industries, manufacturing industries and construction, as well as other sectors decreased, whereas emissions from transport and fugitive emissions increased.

24. Over the period 1990–2011, emissions from international bunkers increased, by 76.1 per cent for aviation and by 11.5 per cent for marine transportation (see figure 7).

Figure 7

**Greenhouse gas emissions from international bunker fuels, for Annex I Parties, 1990 and 2011**



25. Between 2010 and 2011, emissions from aviation increased by 7.1 per cent, while emissions from marine transportation decreased by 2.1 per cent.

26. A comparison of the percentage changes in total aggregate emissions from 1990 to the latest available year reported in document FCCC/SBI/2012/31, using information from Annex I Parties’ 2012 inventory submissions, and those reported in the present document, using information in those Parties’ 2013 inventory submissions, is presented in table 4. It also provides explanations for the differences in the estimates.

Table 4  
**Comparison of 2013 and 2012 changes in total aggregate greenhouse gas emissions from Annex I Parties**

	2012	2013	<i>Explanation of the difference between the estimates reported in 2012 and 2013</i>
<b>Changes in total aggregate GHG emissions excluding LULUCF from 1990 to the latest available year (%)</b>			
All Annex I Parties	-8.9	-9.3	Combined impact of changes for individual Annex I Parties
Annex I EIT Parties	-39.3	-36.8	Increases in emissions between 2010 and 2011, for example in Romania, Russian Federation and Ukraine
Annex I non-EIT Parties	4.9	3.2	Decreases in emissions between 2010 and 2011, for example in Belgium, Netherlands and United Kingdom
<b>Changes in total aggregate GHG emissions including LULUCF from 1990 to the latest available year (%)</b>			
All Annex I Parties	-14.6	-14.5	Combined impact of changes for individual Annex I Parties
Annex I EIT Parties	-52.7	-49.1	Inventory recalculations and increases in emissions between 2010 and 2011, for example in Belarus, Czech Republic and Hungary
Annex I non-EIT Parties	4.1	2.1	Decreases in emissions between 2010 and 2011, for example in Australia, Germany and United Kingdom

*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. Tables 5–16 show detailed GHG data for individual Annex I Parties. Total aggregate GHG emissions excluding and including emissions and removals from LULUCF are provided in tables 5 and 6; emissions of CO<sub>2</sub>, CH<sub>4</sub> and N<sub>2</sub>O (excluding and including emissions and removals from LULUCF) in tables 7–12; emissions of HFCs, PFCs and SF<sub>6</sub> taken together in table 13; and emissions and 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 denote removals; positive values denote emissions.

29. The changes in emissions from 1990 to 2011 were calculated using the exact (not rounded) values and may differ from a ratio calculated with the rounded numbers provided in the tables. An en dash (–) signifies a percentage change exceeding 10,000 per cent.

Table 5

**Total aggregate anthropogenic emissions of CO<sub>2</sub>, CH<sub>4</sub>, N<sub>2</sub>O, HFCs, PFCs and SF<sub>6</sub> excluding emissions/removals from land use, land-use change and forestry, 1990, 2000, 2005, 2010 and 2011**

Party	Gg CO <sub>2</sub> equivalent					Change from 1990 to 2011 (%)
	1990	2000	2005	2010	2011	
Australia	417 742	493 272	529 321	548 744	552 286	32.2
Austria	78 157	80 198	92 895	85 012	82 842	6.0
Belarus*	139 151	79 165	84 174	89 446	87 320	-37.2
Belgium	143 095	145 992	143 269	131 782	120 172	-16.0
Bulgaria* <sup>a</sup>	121 936	59 501	63 749	60 352	66 133	-45.8
Canada	591 079	717 581	737 457	700 849	701 791	18.7
Croatia*	31 647	26 290	30 454	28 615	28 256	-10.7
Cyprus	6 091	8 574	9 311	9 444	9 154	50.3
Czech Republic*	196 039	145 886	145 259	137 423	133 496	-31.9
Denmark	70 088	69 649	65 396	62 779	57 748	-17.6
Estonia*	40 542	17 142	18 478	19 989	20 956	-48.3
European Union <sup>b</sup>	5 574 424	5 066 464	5 129 156	4 705 200	4 550 212	-18.4
Finland	70 452	69 345	68 763	74 551	67 033	-4.9
France	559 492	562 995	563 065	519 889	491 497	-12.2
Germany	1 250 264	1 040 596	997 929	943 518	916 495	-26.7
Greece	104 587	126 224	134 921	117 278	115 045	10.0
Hungary* <sup>a</sup>	116 373	78 440	79 454	67 945	66 148	-43.2
Iceland	3 508	3 876	3 833	4 618	4 413	25.8
Ireland	55 247	68 204	69 452	61 495	57 515	4.1
Italy	518 984	551 301	574 433	500 314	488 792	-5.8
Japan	1 266 671	1 342 088	1 351 407	1 257 381	1 307 728	3.2
Latvia*	26 312	10 105	11 157	12 097	11 545	-56.1
Liechtenstein	230	255	272	234	222	-3.6
Lithuania*	48 754	19 648	23 343	21 121	21 612	-55.7
Luxembourg	12 901	9 760	13 096	12 252	12 098	-6.2
Malta	2 007	2 541	2 992	2 998	3 021	50.6
Monaco	108	120	105	88	85	-21.0
Netherlands	211 849	213 006	209 474	209 177	194 379	-8.2
New Zealand	59 746	69 543	76 713	71 941	72 923	22.1
Norway	50 362	54 017	54 276	54 317	53 364	6.0
Poland* <sup>a</sup>	562 145	385 381	390 231	401 670	399 390	-29.0
Portugal	60 952	84 303	88 037	71 382	69 986	14.8
Romania* <sup>a</sup>	273 148	133 510	141 561	116 670	123 382	-54.8
Russian Federation*	3 351 944	2 047 036	2 128 750	2 217 271	2 320 834	-30.8
Slovakia*	71 782	49 299	50 596	45 896	45 297	-36.9
Slovenia* <sup>a</sup>	20 204	18 920	20 309	19 482	19 509	-3.4
Spain	282 789	378 776	432 834	348 641	350 484	23.9
Sweden	72 750	68 902	67 268	65 551	61 447	-15.5
Switzerland	53 049	51 858	54 376	54 254	50 163	-5.4
Turkey <sup>c</sup>	188 434	298 215	330 982	402 103	422 416	124.2
Ukraine*	929 894	395 750	417 297	383 211	401 576	-56.8
United Kingdom	770 784	677 489	661 931	597 779	556 458	-27.8
United States	6 169 592	7 045 346	7 169 899	6 790 642	6 665 701	8.0
<b>Number of Parties showing decrease in emissions by more than 1 per cent:</b>						<b>28</b>
<b>Number of Parties showing change in emissions within 1 per cent:</b>						<b>0</b>
<b>Number of Parties showing increase in emissions by more than 1 per cent:</b>						<b>15</b>

\* A Party with an economy in transition.

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

<sup>b</sup> Emission estimates of the European Union are as reported for the EU-27 and are reported separately from those of its member States.

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

Table 6

**Total aggregate anthropogenic emissions of CO<sub>2</sub>, CH<sub>4</sub>, N<sub>2</sub>O, HFCs, PFCs and SF<sub>6</sub> including emissions/removals from land use, land-use change and forestry, 1990, 2000, 2005, 2010 and 2011**

Party	Gg CO <sub>2</sub> equivalent					Change from 1990 to 2011 (%)
	1990	2000	2005	2010	2011	
Australia	524 046	556 351	552 331	587 798	511 939	-2.3
Austria	68 230	65 262	85 597	81 495	79 350	16.3
Belarus*	110 577	48 262	57 964	59 267	58 086	-47.5
Belgium	142 181	145 310	141 975	130 425	118 903	-16.4
Bulgaria** <sup>a</sup>	107 596	50 583	54 815	52 243	58 154	-46.0
Canada	529 451	665 388	800 142	804 044	789 058	49.0
Croatia*	25 236	18 571	22 302	20 744	21 225	-15.9
Cyprus	5 952	8 424	9 137	9 278	9 078	52.5
Czech Republic*	192 421	138 362	138 574	131 934	125 536	-34.8
Denmark	75 561	72 867	70 092	62 306	55 084	-27.1
Estonia*	31 693	18 242	13 440	14 047	16 693	-47.3
European Union <sup>b</sup>	5 319 540	4 786 211	4 855 690	4 417 276	4 260 129	-19.9
Finland	55 290	48 894	38 824	49 928	42 456	-23.2
France	536 697	536 564	521 025	485 308	446 870	-16.7
Germany	1 214 506	1 005 794	1 005 301	952 239	925 830	-23.8
Greece	102 090	123 509	132 149	114 678	112 505	10.2
Hungary** <sup>a</sup>	113 773	77 757	74 319	63 861	62 360	-45.2
Iceland	4 679	4 891	4 737	5 414	5 160	10.3
Ireland	52 585	66 950	66 880	57 382	53 813	2.3
Italy	506 830	525 467	536 162	456 973	458 202	-9.6
Japan	1 197 139	1 256 110	1 262 579	1 181 609	1 232 294	2.9
Latvia*	4 006	-9 139	-6 835	-4 314	-5 634	-240.6
Liechtenstein	221	246	264	227	215	-2.7
Lithuania*	44 467	10 408	18 598	10 723	11 128	-75.0
Luxembourg	13 249	9 375	12 711	11 957	11 804	-10.9
Malta	1 950	2 485	2 935	2 938	2 962	51.9
Monaco	108	120	105	88	85	-21.0
Netherlands	214 849	215 931	212 489	212 169	197 645	-8.0
New Zealand	31 634	45 648	55 065	54 126	59 383	87.7
Norway	35 015	39 021	27 470	30 739	25 791	-26.3
Poland** <sup>a</sup>	556 556	377 083	368 595	376 648	377 477	-32.2
Portugal	69 449	86 564	92 559	67 897	64 667	-6.9
Romania** <sup>a</sup>	251 636	104 290	113 499	90 840	98 077	-61.0
Russian Federation*	3 436 458	1 589 110	1 588 217	1 566 658	1 692 400	-50.8
Slovakia*	61 763	38 585	44 493	38 981	37 830	-38.7
Slovenia** <sup>a</sup>	11 011	9 019	10 536	9 830	9 891	-10.2
Spain	263 683	355 513	408 289	319 746	321 412	21.9
Sweden	35 566	33 360	40 178	34 851	26 216	-26.3
Switzerland	49 894	50 631	50 179	51 850	46 752	-6.3
Turkey <sup>c</sup>	173 053	252 715	285 974	361 500	378 776	118.9
Ukraine*	860 156	344 910	378 857	345 256	394 287	-54.2
United Kingdom	774 806	677 913	659 338	594 114	553 148	-28.6
United States	5 388 746	6 394 662	6 197 432	5 921 548	5 797 284	7.6
<b>Number of Parties showing decrease in emissions by more than 1 per cent:</b>						<b>31</b>
<b>Number of Parties showing change in emissions within 1 per cent:</b>						<b>0</b>
<b>Number of Parties showing increase in emissions by more than 1 per cent:</b>						<b>12</b>

\* A Party with an economy in transition.

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

<sup>b</sup> Emission estimates of the European Union are as reported for the EU-27 and are reported separately from those of its member States.

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

Table 7

**Total anthropogenic CO<sub>2</sub> emissions excluding emissions/removals from land use, land-use change and forestry, 1990, 2000, 2005, 2010 and 2011**

Party	Gg CO <sub>2</sub> equivalent					Change from 1990 to 2011 (%)
	1990	2000	2005	2010	2011	
Australia	277 902	349 419	384 750	406 209	406 602	46.3
Austria	62 060	65 970	79 724	72 591	70 455	13.5
Belarus*	103 807	53 319	56 670	58 318	55 401	-46.6
Belgium	119 094	125 250	125 611	114 873	104 467	-12.3
Bulgaria** <sup>a</sup>	90 092	45 523	50 305	47 771	53 243	-40.9
Canada	459 313	564 642	578 955	554 019	555 614	21.0
Croatia*	23 339	20 093	23 485	21 289	20 869	-10.6
Cyprus	4 922	7 144	7 857	7 992	7 672	55.9
Czech Republic*	164 813	125 711	125 744	118 005	114 296	-30.7
Denmark	54 146	55 071	52 495	50 279	45 299	-16.3
Estonia*	36 635	15 143	16 419	17 801	18 833	-48.6
European Union <sup>b</sup>	4 406 963	4 111 652	4 245 739	3 890 922	3 743 430	-15.1
Finland	56 643	56 860	56 570	63 584	56 493	-0.3
France	399 404	415 827	427 719	391 574	363 347	-9.0
Germany	1 041 914	891 400	864 716	826 063	798 058	-23.4
Greece	82 909	102 501	112 802	96 559	94 814	14.4
Hungary** <sup>a</sup>	85 429	59 468	60 477	51 608	49 740	-41.8
Iceland	2 160	2 776	2 853	3 432	3 333	54.3
Ireland	32 424	44 689	47 779	41 342	37 664	16.2
Italy	434 656	462 278	488 078	425 499	414 239	-4.7
Japan	1 141 138	1 251 461	1 282 128	1 191 068	1 240 684	8.7
Latvia*	19 042	6 993	7 790	8 529	8 088	-57.5
Liechtenstein	203	228	240	200	185	-9.0
Lithuania*	35 815	11 853	14 018	13 725	13 970	-61.0
Luxembourg	11 950	8 781	12 108	11 255	11 126	-6.9
Malta	1 866	2 345	2 704	2 641	2 663	42.8
Monaco	105	113	99	82	79	-24.9
Netherlands	159 236	169 921	175 913	181 380	167 550	5.2
New Zealand	25 047	31 350	36 386	33 422	33 176	32.5
Norway	34 833	41 791	43 059	45 548	44 651	28.2
Poland** <sup>a</sup>	469 074	315 540	318 020	332 574	330 309	-29.6
Portugal	45 149	65 863	69 265	52 641	51 527	14.1
Romania** <sup>a</sup>	195 365	92 374	99 393	80 970	87 986	-55.0
Russian Federation*	2 498 542	1 471 337	1 524 790	1 598 211	1 684 433	-32.6
Slovakia*	60 745	41 367	42 224	37 911	37 672	-38.0
Slovenia** <sup>a</sup>	16 356	15 213	16 694	16 136	16 178	-1.1
Spain	226 713	307 023	367 312	280 938	284 407	25.4
Sweden	56 954	54 145	53 231	52 369	48 726	-14.4
Switzerland	44 672	44 033	46 387	46 041	41 979	-6.0
Turkey <sup>c</sup>	141 560	225 609	259 766	326 552	344 694	143.5
Ukraine*	718 951	293 542	320 603	289 708	305 464	-57.5
United Kingdom	590 384	555 249	559 452	504 190	464 618	-21.3
United States	5 100 694	5 962 701	6 100 403	5 727 039	5 603 821	9.9
<b>Number of Parties showing decrease in emissions by more than 1 per cent:</b>						<b>26</b>
<b>Number of Parties showing change in emissions within 1 per cent:</b>						<b>1</b>
<b>Number of Parties showing increase in emissions by more than 1 per cent:</b>						<b>16</b>

\* A Party with an economy in transition.

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

<sup>b</sup> Emission estimates of the European Union are as reported for the EU-27 and are reported separately from those of its member States.

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



Table 8

**Total anthropogenic CO<sub>2</sub> emissions including emissions/removals from land use, land-use change and forestry, 1990, 2000, 2005, 2010 and 2011**

Party	Gg CO <sub>2</sub> equivalent					Change from 1990 to 2011 (%)
	1990	2000	2005	2010	2011	
Australia	377 446	408 441	402 148	439 966	363 518	-3.7
Austria	52 091	50 997	72 390	69 023	66 913	28.5
Belarus*	75 207	22 387	30 438	28 116	26 147	-65.2
Belgium	118 167	124 520	124 251	113 422	103 028	-12.8
Bulgaria** <sup>a</sup>	75 588	36 232	41 202	39 475	45 075	-40.4
Canada	392 295	510 016	632 449	638 050	624 308	59.1
Croatia*	16 907	12 309	15 327	13 407	13 820	-18.3
Cyprus	4 780	6 989	7 682	7 824	7 579	58.6
Czech Republic*	161 063	118 075	118 927	112 369	106 270	-34.0
Denmark	59 602	58 275	57 178	49 793	42 622	-28.5
Estonia*	27 784	16 240	11 378	11 853	14 563	-47.6
European Union <sup>b</sup>	4 142 865	3 821 705	3 963 212	3 594 518	3 445 124	-16.8
Finland	41 334	36 261	26 476	38 770	31 718	-23.3
France	373 644	385 624	382 394	353 746	315 637	-15.5
Germany	1 005 890	856 337	871 823	834 511	807 118	-19.8
Greece	80 383	99 679	110 025	93 952	92 261	14.8
Hungary** <sup>a</sup>	82 790	58 711	55 259	47 464	45 876	-44.6
Iceland	3 261	3 711	3 675	4 140	3 991	22.4
Ireland	29 724	43 382	45 145	37 138	33 883	14.0
Italy	421 621	435 952	449 563	381 940	383 394	-9.1
Japan	1 071 526	1 165 445	1 193 277	1 115 287	1 165 240	8.7
Latvia*	-3 433	-12 472	-10 399	-8 085	-9 261	169.8
Liechtenstein	194	219	232	192	178	-8.2
Lithuania*	31 478	2 552	9 229	3 288	3 443	-89.1
Luxembourg	12 295	8 393	11 720	10 958	10 829	-11.9
Malta	1 809	2 289	2 647	2 581	2 603	43.9
Monaco	105	113	99	82	79	-24.9
Netherlands	162 235	172 845	178 927	184 372	170 815	5.3
New Zealand	-3 148	7 380	14 665	15 539	19 570	-721.6
Norway	19 471	26 778	16 232	21 945	17 055	-12.4
Poland** <sup>a</sup>	461 277	305 019	294 146	305 309	306 139	-33.6
Portugal	52 881	67 641	72 898	48 641	45 801	-13.4
Romania** <sup>a</sup>	173 852	63 154	71 328	55 136	62 677	-63.9
Russian Federation*	2 564 080	994 387	966 080	927 828	1 036 240	-59.6
Slovakia*	50 606	30 568	36 073	30 955	30 164	-40.4
Slovenia** <sup>a</sup>	7 162	5 311	6 920	6 484	6 558	-8.4
Spain	207 417	283 584	342 507	251 976	255 269	23.1
Sweden	19 688	18 529	26 044	21 530	13 377	-32.1
Switzerland	41 498	42 801	42 185	43 632	38 562	-7.1
Turkey <sup>c</sup>	126 179	180 109	214 758	285 948	301 054	138.6
Ukraine*	649 194	242 688	282 146	251 714	298 173	-54.1
United Kingdom	593 536	554 807	556 093	499 881	460 687	-22.4
United States	4 314 282	5 289 698	5 111 508	4 847 628	4 707 814	9.1
<b>Number of Parties showing decrease in emissions by more than 1 per cent:</b>						<b>30</b>
<b>Number of Parties showing change in emissions within 1 per cent:</b>						<b>0</b>
<b>Number of Parties showing increase in emissions by more than 1 per cent:</b>						<b>13</b>

\* A Party with an economy in transition.

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

<sup>b</sup> Emission estimates of the European Union are as reported for the EU-27 and are reported separately from those of its member States.

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

Table 9

**Total anthropogenic CH<sub>4</sub> emissions excluding emissions/removals from land use, land-use change and forestry, 1990, 2000, 2005, 2010 and 2011**

Party	Gg CO <sub>2</sub> equivalent					Change from 1990 to 2011 (%)
	1990	2000	2005	2010	2011	
Australia	116 127	115 635	112 864	110 552	112 569	-3.1
Austria	8 304	6 623	6 083	5 536	5 362	-35.4
Belarus*	15 217	11 422	13 116	15 222	15 276	0.4
Belgium	9 708	8 290	6 796	6 508	6 346	-34.6
Bulgaria** <sup>a</sup>	17 259	8 533	7 931	7 361	7 683	-55.5
Canada	72 003	94 026	98 088	90 401	90 563	25.8
Croatia*	3 420	2 729	3 132	3 566	3 509	2.6
Cyprus	719	927	960	945	898	24.8
Czech Republic*	17 815	11 084	10 400	10 284	10 234	-42.6
Denmark	6 068	5 913	5 684	5 620	5 525	-9.0
Estonia*	1 673	1 025	1 044	1 017	957	-42.8
European Union <sup>b</sup>	591 225	474 646	422 669	391 911	384 085	-35.0
Finland	6 330	5 423	4 545	4 353	4 220	-33.3
France	59 256	59 482	54 167	52 720	51 445	-13.2
Germany	109 941	75 100	59 483	50 385	48 844	-55.6
Greece	10 336	10 834	10 163	9 784	9 631	-6.8
Hungary** <sup>a</sup>	13 474	9 991	9 263	8 678	8 460	-37.2
Iceland	406	440	443	459	444	9.4
Ireland	13 674	13 412	12 810	11 697	11 629	-15.0
Italy	43 761	45 844	41 107	37 290	36 568	-16.4
Japan	32 131	26 134	23 015	20 741	20 299	-36.8
Latvia*	3 467	1 706	1 724	1 740	1 632	-52.9
Liechtenstein	14	13	15	15	15	7.2
Lithuania*	5 750	3 158	3 373	3 177	3 046	-47.0
Luxembourg	462	467	452	453	437	-5.3
Malta	91	125	140	175	167	83.7
Monaco	0.66	0.81	0.63	0.55	0.55	-16.6
Netherlands	25 712	19 918	16 101	15 936	15 261	-40.6
New Zealand	25 746	28 016	28 416	26 944	27 119	5.3
Norway	5 030	5 058	4 763	4 522	4 397	-12.6
Poland** <sup>a</sup>	52 872	39 361	38 326	36 448	35 538	-32.8
Portugal	10 260	12 113	12 644	12 484	12 447	21.3
Romania** <sup>a</sup>	46 540	26 398	26 335	22 584	22 258	-52.2
Russian Federation*	593 579	434 628	473 756	491 084	506 637	-14.6
Slovakia*	4 414	4 248	4 358	4 108	4 138	-6.2
Slovenia** <sup>a</sup>	2 174	2 118	2 139	1 998	1 966	-9.5
Spain	26 586	32 163	33 184	33 349	33 155	24.7
Sweden	6 938	6 252	5 775	5 076	4 985	-28.2
Switzerland	4 676	3 916	3 772	3 768	3 734	-20.1
Turkey <sup>c</sup>	34 054	53 807	52 818	57 587	58 811	72.7
Ukraine*	151 641	75 606	70 219	63 859	63 330	-58.2
United Kingdom	99 133	64 987	48 461	42 992	42 035	-57.6
United States	637 440	597 494	585 615	588 042	573 063	-10.1
<b>Number of Parties showing decrease in emissions by more than 1 per cent:</b>						<b>32</b>
<b>Number of Parties showing change in emissions within 1 per cent:</b>						<b>1</b>
<b>Number of Parties showing increase in emissions by more than 1 per cent:</b>						<b>10</b>

\* A Party with an economy in transition.

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

<sup>b</sup> Emission estimates of the European Union are as reported for the EU-27 and are reported separately from those of its member States.

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

Table 10  
**Total anthropogenic CH<sub>4</sub> emissions including emissions/removals from land use, land-use change and forestry, 1990, 2000, 2005, 2010 and 2011**

Party	Gg CO <sub>2</sub> equivalent					Change from 1990 to 2011 (%)
	1990	2000	2005	2010	2011	
Australia	120 901	118 350	116 850	114 068	114 171	-5.6
Austria	8 305	6 623	6 083	5 536	5 362	-35.4
Belarus*	15 224	11 430	13 120	15 227	15 280	0.4
Belgium	9 708	8 290	6 796	6 508	6 352	-34.6
Bulgaria** <sup>a</sup>	17 261	8 704	7 935	7 380	7 704	-55.4
Canada	75 331	95 527	103 758	102 223	102 019	35.4
Croatia*	3 433	2 780	3 133	3 567	3 516	2.4
Cyprus	720	928	960	945	899	25.0
Czech Republic*	17 915	11 176	10 513	10 413	10 289	-42.6
Denmark	6 069	5 913	5 684	5 620	5 525	-9.0
Estonia*	1 674	1 027	1 044	1 017	958	-42.8
European Union <sup>b</sup>	595 867	480 244	427 939	396 673	388 580	-34.8
Finland	6 373	5 470	4 594	4 410	4 279	-32.9
France	60 421	61 616	55 971	54 482	53 080	-12.1
Germany	109 950	75 104	59 484	50 388	48 845	-55.6
Greece	10 363	10 930	10 168	9 790	9 643	-7.0
Hungary** <sup>a</sup>	13 505	10 022	9 299	8 701	8 497	-37.1
Iceland	408	448	451	468	453	11.0
Ireland	13 683	13 420	12 814	11 718	11 636	-15.0
Italy	44 359	46 191	41 267	37 453	36 756	-17.1
Japan	32 140	26 142	23 024	20 745	20 304	-36.8
Latvia*	3 486	1 765	1 759	1 780	1 641	-52.9
Liechtenstein	14	13	15	15	15	7.2
Lithuania*	5 752	3 161	3 374	3 178	3 048	-47.0
Luxembourg	462	467	452	453	437	-5.3
Malta	91	125	140	175	167	83.7
Monaco	0.66	0.81	0.63	0.55	0.55	-16.6
Netherlands	25 713	19 919	16 101	15 937	15 262	-40.6
New Zealand	25 804	28 071	28 471	26 998	27 171	5.3
Norway	5 031	5 058	4 763	4 524	4 398	-12.6
Poland** <sup>a</sup>	55 063	41 568	40 548	38 682	37 787	-31.4
Portugal	10 481	12 302	13 174	12 679	12 538	19.6
Romania** <sup>a</sup>	46 540	26 398	26 335	22 584	22 258	-52.2
Russian Federation*	603 762	444 812	483 545	501 734	517 301	-14.3
Slovakia*	4 428	4 259	4 380	4 131	4 161	-6.0
Slovenia** <sup>a</sup>	2 174	2 119	2 140	1 998	1 967	-9.5
Spain	26 759	32 323	33 420	33 409	33 216	24.1
Sweden	6 940	6 255	5 780	5 077	4 987	-28.1
Switzerland	4 684	3 917	3 772	3 768	3 736	-20.2
Turkey <sup>c</sup>	34 054	53 808	52 818	57 587	58 811	72.7
Ukraine*	151 649	75 609	70 225	63 882	63 331	-58.2
United Kingdom	99 157	65 018	48 500	43 016	42 063	-57.6
United States	639 926	608 927	593 648	592 710	587 235	-8.2
<b>Number of Parties showing decrease in emissions by more than 1 per cent:</b>						<b>32</b>
<b>Number of Parties showing change in emissions within 1 per cent:</b>						<b>1</b>
<b>Number of Parties showing increase in emissions by more than 1 per cent:</b>						<b>10</b>

\* A Party with an economy in transition.

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

<sup>b</sup> Emission estimates of the European Union are as reported for the EU-27 and are reported separately from those of its member States.

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

Table 11  
**Total anthropogenic N<sub>2</sub>O excluding emissions/removals from land use, land-use change and forestry, 1990, 2000, 2005, 2010 and 2011**

Party	Gg CO <sub>2</sub> equivalent					Change from 1990 to 2011 (%)
	1990	2000	2005	2010	2011	
Australia	18 416	25 557	25 882	24 575	25 065	36.1
Austria	6 198	6 289	5 448	5 184	5 294	-14.6
Belarus*	20 127	14 414	14 360	15 891	16 640	-17.3
Belgium	10 877	11 036	9 160	8 268	7 068	-35.0
Bulgaria** <sup>a</sup>	14 581	5 421	5 393	4 847	4 796	-67.1
Canada	49 065	48 614	50 308	47 287	46 222	-5.8
Croatia*	3 941	3 285	3 490	3 279	3 392	-13.9
Cyprus	450	484	472	450	458	1.8
Czech Republic*	13 334	8 678	8 425	7 620	7 771	-41.7
Denmark	9 829	7 976	6 362	6 005	6 063	-38.3
Estonia*	2 234	902	895	1 016	1 004	-55.1
European Union <sup>b</sup>	517 039	413 049	385 089	332 780	331 391	-35.9
Finland	7 364	6 495	6 709	5 415	5 258	-28.6
France	90 776	77 674	67 322	59 376	59 879	-34.0
Germany	86 548	61 411	60 916	54 628	56 871	-34.3
Greece	10 239	8 537	7 910	7 316	7 010	-31.5
Hungary** <sup>a</sup>	17 128	8 360	8 590	6 464	6 774	-60.4
Iceland	521	495	450	454	448	-13.9
Ireland	9 112	9 483	8 118	7 825	7 621	-16.4
Italy	37 396	39 483	37 668	27 076	26 873	-28.1
Japan	31 562	28 921	23 946	21 993	21 624	-31.5
Latvia*	3 804	1 400	1 607	1 743	1 730	-54.5
Liechtenstein	13	12	13	13	13	1.2
Lithuania*	7 189	4 623	5 883	4 022	4 371	-39.2
Luxembourg	476	481	479	470	460	-3.3
Malta	50	61	59	52	50	1.0
Monaco	1.75	3.41	3.14	2.73	2.72	55.5
Netherlands	19 986	17 399	15 443	9 208	9 105	-54.4
New Zealand	8 308	9 855	11 121	10 436	10 696	28.7
Norway	4 929	4 589	4 789	3 053	3 079	-37.5
Poland** <sup>a</sup>	40 071	29 176	29 272	26 861	27 241	-32.0
Portugal	5 543	5 998	5 254	4 699	4 479	-19.2
Romania** <sup>a</sup>	27 894	13 282	15 215	12 408	12 679	-54.5
Russian Federation*	218 530	112 039	108 690	113 771	117 569	-46.2
Slovakia*	6 351	3 582	3 772	3 416	3 009	-52.6
Slovenia** <sup>a</sup>	1 388	1 426	1 191	1 110	1 103	-20.5
Spain	26 136	30 584	26 373	25 378	23 934	-8.4
Sweden	8 370	7 602	7 073	7 031	6 680	-20.2
Switzerland	3 458	3 184	3 070	3 135	3 075	-11.1
Turkey <sup>c</sup>	12 217	17 142	14 674	13 079	12 652	3.6
Ukraine*	59 098	26 488	26 094	28 953	32 057	-45.8
United Kingdom	67 449	45 652	40 499	35 299	34 218	-49.3
United States	341 254	347 885	347 698	338 270	343 468	0.6
<b>Number of Parties showing decrease in emissions by more than 1 per cent:</b>						<b>35</b>
<b>Number of Parties showing change in emissions within 1 per cent:</b>						<b>2</b>
<b>Number of Parties showing increase in emissions by more than 1 per cent:</b>						<b>6</b>

\* A Party with an economy in transition.

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

<sup>b</sup> Emission estimates of the European Union are as reported for the EU-27 and are reported separately from those of its member States.

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

Table 12

**Total anthropogenic N<sub>2</sub>O emissions including emissions/removals from land use, land-use change and forestry, 1990, 2000, 2005, 2010 and 2011**

Party	Gg CO <sub>2</sub> equivalent					Change from 1990 to 2011 (%)
	1990	2000	2005	2010	2011	
Australia	20 401	26 900	27 508	26 353	26 199	28.4
Austria	6 239	6 326	5 484	5 234	5 344	-14.3
Belarus*	20 145	14 435	14 377	15 909	16 656	-17.3
Belgium	10 890	11 084	9 227	8 362	7 232	-33.6
Bulgaria** <sup>a</sup>	14 744	5 622	5 557	5 014	4 964	-66.3
Canada	51 126	49 546	53 830	54 629	53 338	4.3
Croatia*	3 948	3 300	3 496	3 288	3 403	-13.8
Cyprus	452	488	473	452	473	4.5
Czech Republic*	13 365	8 697	8 443	7 639	7 783	-41.8
Denmark	9 846	7 990	6 375	6 017	6 076	-38.3
Estonia*	2 236	903	898	1 023	1 011	-54.8
European Union <sup>b</sup>	521 612	417 145	388 880	336 499	335 119	-35.8
Finland	7 468	6 594	6 814	5 548	5 395	-27.8
France	92 576	79 313	68 803	60 861	61 326	-33.8
Germany	86 804	61 669	61 179	54 897	57 144	-34.2
Greece	10 242	8 547	7 911	7 316	7 012	-31.5
Hungary** <sup>a</sup>	17 136	8 403	8 637	6 501	6 814	-60.2
Iceland	590	568	525	533	528	-10.5
Ireland	9 141	9 528	8 175	7 896	7 694	-15.8
Italy	37 680	39 627	37 751	27 132	26 939	-28.5
Japan	31 634	28 951	23 960	21 999	21 629	-31.6
Latvia*	3 953	1 562	1 769	1 905	1 891	-52.2
Liechtenstein	13	12	13	13	13	1.3
Lithuania*	7 237	4 681	5 926	4 061	4 412	-39.0
Luxembourg	479	484	481	472	463	-3.3
Malta	50	61	59	52	50	1.0
Monaco	1.77	3.44	3.17	2.75	2.74	54.7
Netherlands	19 986	17 399	15 443	9 208	9 105	-54.4
New Zealand	8 333	9 875	11 137	10 451	10 710	28.5
Norway	4 942	4 606	4 810	3 075	3 102	-37.2
Poland** <sup>a</sup>	40 089	29 193	29 288	26 869	27 250	-32.0
Portugal	6 087	6 292	5 613	5 018	4 793	-21.3
Romania** <sup>a</sup>	27 894	13 283	15 217	12 411	12 683	-54.5
Russian Federation*	227 324	120 878	117 079	122 891	126 662	-44.3
Slovakia*	6 457	3 656	3 798	3 434	3 027	-53.1
Slovenia** <sup>a</sup>	1 388	1 426	1 191	1 110	1 103	-20.5
Spain	26 154	30 600	26 397	25 384	23 940	-8.5
Sweden	8 449	7 675	7 165	7 168	6 795	-19.6
Switzerland	3 468	3 188	3 075	3 139	3 080	-11.2
Turkey <sup>c</sup>	12 217	17 142	14 674	13 079	12 652	3.6
Ukraine*	59 110	26 498	26 104	28 969	32 057	-45.8
United Kingdom	68 296	46 488	41 226	35 918	34 811	-49.0
United States	344 333	358 771	356 091	343 918	356 887	3.6
<b>Number of Parties showing decrease in emissions by more than 1 per cent:</b>						<b>34</b>
<b>Number of Parties showing change in emissions within 1 per cent:</b>						<b>1</b>
<b>Number of Parties showing increase in emissions by more than 1 per cent:</b>						<b>8</b>

\* A Party with an economy in transition.

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

<sup>b</sup> Emission estimates of the European Union are as reported for the EU-27 and are reported separately from those of its member States.

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

Table 13  
**Total aggregate anthropogenic emissions of HFCs, PFCs and SF<sub>6</sub>, 1990, 2000, 2005, 2010 and 2011**

Party	<i>Gg CO<sub>2</sub> equivalent</i>					<i>Change from 1990 to 2011 (%)</i>
	1990	2000	2005	2010	2011	
Australia	5 298	2 660	5 825	7 410	8 050	52.0
Austria	1 595	1 317	1 640	1 701	1 731	8.5
Belarus*		10	28	16	2	
Belgium	3 416	1 416	1 702	2 133	2 291	-32.9
Bulgaria** <sup>a</sup>	3	25	120	374	411	-
Canada	10 698	10 299	10 106	9 142	9 393	-12.2
Croatia*	948	183	347	482	486	-48.7
Cyprus		19	22	56	127	
Czech Republic*	78	413	690	1 514	1 194	1 437.7
Denmark	44	690	855	875	862	1 838.9
Estonia*		72	119	154	161	
European Union <sup>b</sup>	59 197	67 117	75 659	89 586	91 306	54.2
Finland	115	568	939	1 200	1 063	824.3
France	10 056	10 012	13 857	16 219	16 826	67.3
Germany	11 861	12 684	12 814	12 442	12 722	7.3
Greece	1 102	4 353	4 045	3 620	3 590	225.9
Hungary** <sup>a</sup>	342	621	1 123	1 195	1 174	243.6
Iceland	421	164	87	273	188	-55.4
Ireland	37	620	746	631	600	1 525.6
Italy	3 171	3 697	7 581	10 449	11 112	250.5
Japan	61 840	35 572	22 317	23 578	25 121	-59.4
Latvia*		6	36	85	95	
Liechtenstein	0.00	2.41	4.68	6.75	8.81	-
Lithuania*		14	70	196	225	
Luxembourg	13	31	58	74	75	470.4
Malta	0	10	90	130	140	-
Monaco	0.16	2.90	2.22	2.29	2.87	1 686.5
Netherlands	6 915	5 768	2 018	2 653	2 462	-64.4
New Zealand	645	322	791	1 139	1 933	199.6
Norway	5 570	2 580	1 665	1 195	1 237	-77.8
Poland** <sup>a</sup>	128	1 304	4 614	5 788	6 302	4 840.4
Portugal		329	874	1 559	1 534	
Romania** <sup>a</sup>	3 350	1 456	619	708	459	-86.3
Russian Federation*	41 293	29 032	21 513	14 205	12 196	-70.5
Slovakia*	271	102	242	461	477	75.8
Slovenia** <sup>a</sup>	287	162	285	238	262	-8.5
Spain	3 353	9 006	5 965	8 977	8 987	168.0
Sweden	488	902	1 189	1 076	1 057	116.4
Switzerland	244	725	1 147	1 311	1 375	463.9
Turkey <sup>c</sup>	603	1 656	3 725	4 885	6 259	937.1
Ukraine*	203	114	381	691	726	257.3
United Kingdom	13 817	11 601	13 519	15 299	15 587	12.8
United States	90 205	137 266	136 184	137 292	145 349	61.1
<b>Number of Parties showing decrease in emissions by more than 1 per cent:</b>						<b>10</b>
<b>Number of Parties showing change in emissions within 1 per cent:</b>						<b>0</b>
<b>Number of Parties showing increase in emissions by more than 1 per cent:</b>						<b>27</b>

\* A Party with an economy in transition.

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

<sup>b</sup> Emission estimates of the European Union are as reported for the EU-27 and are reported separately from those of its member States.

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

Table 14  
**Net anthropogenic CO<sub>2</sub> emissions and removals from land use, land-use change and forestry, 1990, 2000, 2005, 2010 and 2011**

Party	Gg CO <sub>2</sub> equivalent					Change from 1990 to 2011 (%)
	1990	2000	2005	2010	2011	
Australia	99 544	59 021	17 398	33 758	-43 084	-143.3
Austria	-9 968	-14 973	-7 334	-3 568	-3 542	-64.5
Belarus*	-28 599	-30 932	-26 231	-30 203	-29 255	2.3
Belgium	-927	-730	-1 360	-1 451	-1 439	55.1
Bulgaria** <sup>a</sup>	-14 504	-9 291	-9 102	-8 295	-8 168	-43.7
Canada	-67 018	-54 627	53 494	84 031	68 694	-202.5
Croatia*	-6 431	-7 785	-8 159	-7 882	-7 049	9.6
Cyprus	-142	-155	-175	-168	-93	-34.4
Czech Republic*	-3 749	-7 636	-6 817	-5 636	-8 026	114.1
Denmark	5 456	3 204	4 683	-485	-2 677	-149.1
Estonia*	-8 851	1 096	-5 041	-5 949	-4 270	-51.8
European Union <sup>b</sup>	-264 099	-289 947	-282 527	-296 404	-298 307	13.0
Finland	-15 309	-20 598	-30 094	-24 814	-24 775	61.8
France	-25 760	-30 203	-45 325	-37 827	-47 710	85.2
Germany	-36 024	-35 063	7 107	8 448	9 060	-125.2
Greece	-2 527	-2 821	-2 777	-2 607	-2 553	1.1
Hungary** <sup>a</sup>	-2 639	-757	-5 218	-4 145	-3 864	46.4
Iceland	1 101	935	822	709	659	-40.2
Ireland	-2 700	-1 307	-2 634	-4 204	-3 782	40.1
Italy	-13 035	-26 326	-38 515	-43 560	-30 845	136.6
Japan	-69 612	-86 015	-88 851	-75 782	-75 445	8.4
Latvia*	-22 474	-19 464	-18 189	-16 614	-17 350	-22.8
Liechtenstein	-9.47	-8.60	-7.72	-7.16	-7.04	-25.7
Lithuania*	-4 337	-9 301	-4 789	-10 437	-10 527	142.7
Luxembourg	345	-388	-388	-298	-297	-186.0
Malta	-57	-56	-57	-60	-60	5.5
Monaco	-0.03	-0.04	-0.04	-0.04	-0.04	14.0
Netherlands	2 999	2 925	3 014	2 992	3 265	8.9
New Zealand	-28 195	-23 970	-21 721	-17 883	-13 606	-51.7
Norway	-15 362	-15 013	-26 828	-23 602	-27 596	79.6
Poland** <sup>a</sup>	-7 796	-10 521	-23 873	-27 265	-24 170	210.0
Portugal	7 731	1 778	3 633	-3 999	-5 726	-174.1
Romania** <sup>a</sup>	-21 513	-29 220	-28 065	-25 834	-25 308	17.6
Russian Federation*	65 537	-476 950	-558 709	-670 383	-648 193	-1 089.0
Slovakia*	-10 139	-10 799	-6 151	-6 956	-7 508	-26.0
Slovenia** <sup>a</sup>	-9 193	-9 902	-9 774	-9 652	-9 620	4.6
Spain	-19 296	-23 440	-24 805	-28 962	-29 138	51.0
Sweden	-37 266	-35 617	-27 187	-30 838	-35 349	-5.1
Switzerland	-3 174	-1 232	-4 202	-2 409	-3 417	7.6
Turkey <sup>c</sup>	-15 381	-45 500	-45 008	-40 603	-43 640	183.7
Ukraine*	-69 757	-50 854	-38 456	-37 994	-7 291	-89.5
United Kingdom	3 152	-442	-3 359	-4 309	-3 931	-224.7
United States	-786 412	-673 003	-988 895	-879 410	-896 007	13.9
<b>Number of Parties showing decrease in emissions by more than 1 per cent:</b>						<b>19</b>
<b>Number of Parties showing change in emissions within 1 per cent:</b>						<b>0</b>
<b>Number of Parties showing increase in emissions by more than 1 per cent:</b>						<b>24</b>

\* A Party with an economy in transition.

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

<sup>b</sup> Emission estimates of the European Union are as reported for the EU-27 and are reported separately from those of its member States.

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

Table 15  
**Anthropogenic CH<sub>4</sub> emissions from land use, land-use change and forestry, 1990, 2000, 2005, 2010 and 2011**

Party	<i>Gg CO<sub>2</sub> equivalent</i>					<i>Change from 1990 to 2011 (%)</i>
	1990	2000	2005	2010	2011	
Australia	4 775	2 715	3 986	3 517	1 602	-66.4
Austria	0.58	0.12	0.09	0.14	0.13	-78.0
Belarus*	7.08	8.16	3.77	4.82	4.45	-37.1
Belgium	0.48	0.00	0.00		6.26	1 204.9
Bulgaria** <sup>a</sup>	1	171	4	19	21	1 450.7
Canada	3 328	1 502	5 670	11 822	11 456	244.2
Croatia*	12.50	50.70	1.12	1.32	6.82	-45.5
Cyprus	0.27	0.45	0.08	0.24	1.70	529.0
Czech Republic*	100	92	113	128	55	-44.9
Denmark	0.55	0.00	0.02	0.01	0.01	-97.6
Estonia*	0.40	1.68	0.31	0.13	0.11	-71.4
European Union <sup>b</sup>	4 641	5 598	5 270	4 761	4 495	-3.1
Finland	43	48	49	57	60	37.2
France	1 165	2 134	1 804	1 761	1 636	40.4
Germany	9.08	3.42	1.10	3.20	1.32	-85.5
Greece	27	96	5	6	12	-54.7
Hungary** <sup>a</sup>	31	31	36	23	37	20.9
Iceland	1.60	7.80	7.80	8.33	8.33	420.7
Ireland	9.29	7.98	4.78	20.44	7.58	-18.4
Italy	598	347	160	162	189	-68.5
Japan	8.51	7.78	9.18	4.14	5.35	-37.1
Latvia*	19	59	35	40	10	-50.7
Liechtenstein						
Lithuania*	2.30	2.95	0.86	1.04	1.95	-15.2
Luxembourg						
Malta						
Monaco						
Netherlands	0.54	0.61	0.68	0.73	0.74	36.3
New Zealand	58	55	56	54	51	-10.5
Norway	1.11	0.17	0.41	1.62	0.22	-80.5
Poland** <sup>a</sup>	2 190	2 207	2 222	2 234	2 249	2.7
Portugal	221	189	530	194	92	-58.5
Romania** <sup>a</sup>	0.00	0.08	0.00	0.00	0.07	3 187.4
Russian Federation*	10 183	10 184	9 789	10 650	10 664	4.7
Slovakia*	14	12	22	23	23	60.3
Slovenia** <sup>a</sup>		0.91	1.04	0.38	1.17	
Spain	173	160	236	61	61	-64.8
Sweden	1.72	2.95	4.99	0.71	2.13	23.7
Switzerland	8.19	0.27	0.35	0.19	1.24	-84.9
Turkey <sup>c</sup>	0.04	0.07	0.00	0.01	0.01	-70.6
Ukraine*	8.39	3.44	5.25	23.25	0.82	-90.2
United Kingdom	24	31	39	25	28	18.2
United States	2 486	11 433	8 034	4 669	14 172	470.1
<b>Number of Parties showing decrease in emissions by more than 1 per cent:</b>						<b>22</b>
<b>Number of Parties showing change in emissions within 1 per cent:</b>						<b>0</b>
<b>Number of Parties showing increase in emissions by more than 1 per cent:</b>						<b>16</b>

\* A Party with an economy in transition.

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

<sup>b</sup> Emission estimates of the European Union are as reported for the EU-27 and are reported separately from those of its member States.

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



Table 16  
**Anthropogenic N<sub>2</sub>O emissions from land use, land-use change and forestry, 1990, 2000, 2005, 2010 and 2011**

Party	<i>Gg CO<sub>2</sub> equivalent</i>					<i>Change from 1990 to 2011 (%)</i>
	1990	2000	2005	2010	2011	
Australia	1 985	1 343	1 626	1 779	1 134	-42.9
Austria	41	37	36	50	51	23.8
Belarus*	18	21	18	19	16	-7.5
Belgium	13	48	66	94	164	1 142.0
Bulgaria** <sup>a</sup>	163	202	164	167	168	2.8
Canada	2 061	932	3 522	7 342	7 116	245.3
Croatia*	7.71	14.76	6.04	8.70	10.65	38.1
Cyprus	2.33	3.84	0.71	2.05	14.68	529.0
Czech Republic*	31	19	19	19	12	-61.8
Denmark	16	14	13	13	13	-23.9
Estonia*	1.55	1.79	3.36	6.95	7.00	351.2
European Union <sup>b</sup>	4 573	4 096	3 791	3 719	3 728	-18.5
Finland	104	99	105	134	138	32.7
France	1 800	1 639	1 481	1 485	1 447	-19.6
Germany	256	258	263	269	273	6.5
Greece	2.74	9.71	0.50	0.62	1.24	-54.7
Hungary** <sup>a</sup>	8	43	47	37	40	392.7
Iceland	69	73	75	79	79	15.0
Ireland	28	45	57	71	73	156.4
Italy	283	144	83	57	66	-76.7
Japan	71	30	14	6	5	-92.5
Latvia*	149	162	161	163	161	7.9
Liechtenstein	0.01	0.01	0.01	0.01	0.01	47.3
Lithuania*	48	58	43	39	42	-13.5
Luxembourg	2.85	2.82	2.70	2.57	2.54	-10.7
Malta						
Monaco	0.02	0.02	0.03	0.02	0.02	-15.3
Netherlands	0.06	0.06	0.07	0.07	0.08	36.3
New Zealand	25	20	17	14	14	-42.7
Norway	13	17	21	23	23	71.4
Poland** <sup>a</sup>	17	17	16	8	9	-48.6
Portugal	544	294	359	319	314	-42.3
Romania** <sup>a</sup>	0.00	0.77	2.20	3.29	3.40	-
Russian Federation*	8 794	8 840	8 388	9 120	9 094	3.4
Slovakia*	106	74	26	18	18	-83.2
Slovenia** <sup>a</sup>		0.16	0.19	0.07	0.21	
Spain	18	16	24	6	6	-64.8
Sweden	79	72	92	137	115	44.9
Switzerland	10.36	4.93	4.43	3.86	4.37	-57.8
Turkey <sup>c</sup>	0.00	0.01	0.00	0.00	0.00	-70.0
Ukraine*	12	10	11	16	0	-96.0
United Kingdom	846	836	727	619	593	-29.9
United States	3 079	10 886	8 394	5 647	13 419	335.8
<b>Number of Parties showing decrease in emissions by more than 1 per cent:</b>						<b>21</b>
<b>Number of Parties showing change in emissions within 1 per cent:</b>						<b>0</b>
<b>Number of Parties showing increase in emissions by more than 1 per cent:</b>						<b>20</b>

\* A Party with an economy in transition.

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

<sup>b</sup> Emission estimates of the European Union are as reported for the EU-27 and are reported separately from those of its member States.

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